APPENDIX V – Dam Investigations

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5.1 Kankakee River Dams

5.1.1 Momence Dam

5.1.1.1 Existing Documentation

¶ **Dam and Location:**

Momence Dam	Momence IL	Kankakee River	Kankakee County

¶ **Ownership**
Ownership of the dam has not been verified; however, the mayor believed that the city of Momence gave the dam to the State of Illinois prior to him being mayor. The mayor is checking for documentation and will notify us if any is found.

¶ **History**
The only history available at the present evaluation time is what was discussed with the current mayor. He mentioned that the dam was built in the 1930's by the WPA, which raised the water surface upstream and created the existing island. He also stated that the dam historically had flash boards that could raise the water level further; however, these are no longer present.

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

5.1.1.2 Visual Reconnaissance & EMS Interview Summary

¶ **Dam and Location:**

Momence	Momence	Kankakee	Kankakee
Dam	IL	River	County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Lee Guethle
Company: CTE Engineers

¶ **Date & Time:** 1/22/2007; 9:00 am to 10:30 am

Approximate Flow:
5,170 cfs at WSE of 3.82 feet, according to the USGS gauge station #05520500 downstream of *the* dam approximately 750 ft. Water level upstream would have been a few feet higher due to dam. According to the mayor, the water level on the day of the visual reconnaissance, was the highest it had been all year.

¶ **Standard Photo Set/Video:** Complete

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
Short length of fencing on the right bank upstream, immediately downstream of the main vehicle bridge located just upstream from the dam. The fence extends a short distance to the bank and does not continue along the river walk.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
None observed on the plan view with regard to dam safety on either bank upstream or downstream. Information signs noted were “Attention Anglers” (104) (for fish identification), along upstream right bank and “Adopt a River” (119), “No Trespassing” (121).

¶ **Lighting**
Aesthetic parking flood lights along the right bank upstream river walk, downstream of the main vehicle bridge. The lights appear they would provide adequate lighting along the bank.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Access along the left bank to the dam is restricted as this is entirely private property downstream of the vehicular bridge; however, access far upstream is possible at the local park. Access on the right bank upstream is excellent, with parking lots for the police station and city hall adjacent to the river walk and dam.

¶ **EMS Interview Summary**
Interviewed Chief Dave Horn with Momence Fire Department. He has 30 years of experience with the department. He can be reached at 815-472-4525.

1. Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   Momence Fire Department is a volunteer fire department. They received 283 calls last year. The response time is dependent on the availability of volunteers. However, the fire house is very close to the dam and the response time could be as low as 1 minute if someone were at the firehouse.

   His team has had training with the group in Lake County Indiana, involving stretching ropes across the river. They would dispatch 1 or 2 boats—they have a general purpose boat and a flat boat. Rescuers are equipped with Gumby suits.

2. Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   Chief Horn stated that the only incident to his recollection was 4 or 5 years ago when a jet skier went over the dam but managed to hold onto the jet ski and was rescued.

3. Are there any public education measures in place to promote dam safety?

   No programs in place.

   River users do not generally enter the channel very often because of low flows making it impassible. During low flows, water by-passes the dam and crosses a 6 ft missing portion of the dam on the right side. However, during high flows there can be large numbers of canoeists in the area. No signs are in place warning of the dam.

4. Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   Believed training for fire departments in dam rescue would be a good beneficial. Placing warning signs upstream and at the dam would be beneficial. Believed that a life ring would probably be stolen.

0 25 50 100 Feet

1 inch equals 100 feet

Momence Dam - Kankakee River

Momence, Illinois

CTE | AECOM

Figure 5.1.1.2-1
Momence

Photo 5.1.1.2 - 1 - Momence Dam, Kankakee River
Dam face from right abutment.

Photo 5.1.1.2 - 2 - Momence Dam, Kankakee River
View of dam from right bank, upstream.

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Figure 5.1.1.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

MOMENCE ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

MOMENCE DAM – KANKAKEE RIVER
DAM SURVEY – PLAN VIEW

DRAWN: MRR	CHK'D. KDS
DESIGNED: –	APPRV'D: KSS
DATE: 25 January 2007	
SCALE: 1" = 50'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

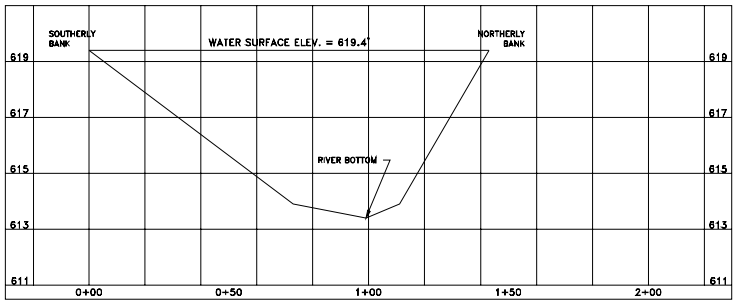
COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON NGS/OPUS DIFFERENTIAL GPS SOLUTION.

FIELDWORK OCCURED ON JANUARY 05, 2007

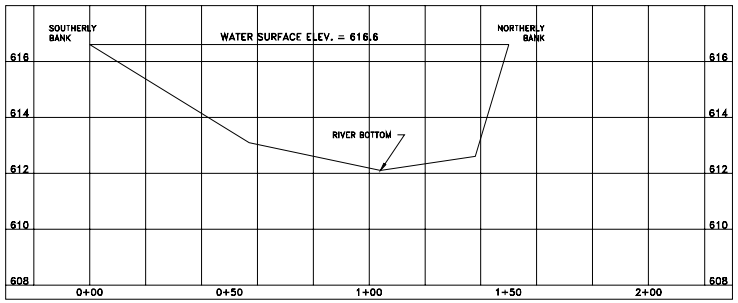
SHEET 1
OF 2

DRAWING NUMBER
9002TOM

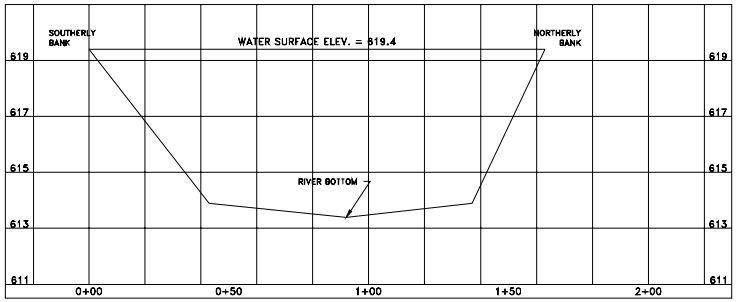
M:\PROJ\07501\9002\TOPO\MOMENCE DAM\9002TOM.DWG



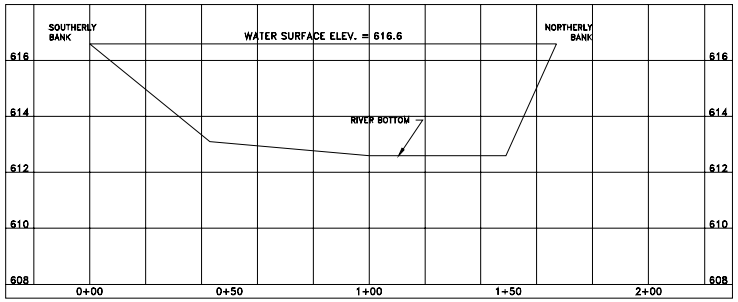
925'± UPSTREAM



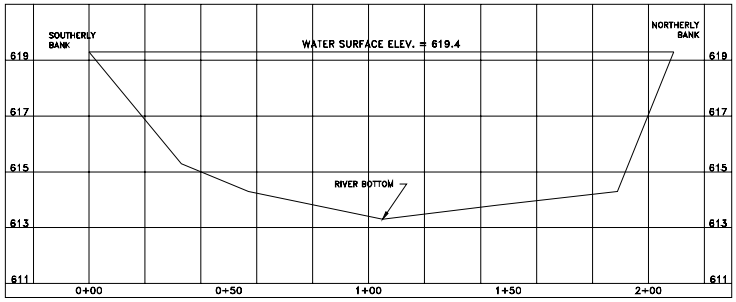
70'± DOWNSTREAM



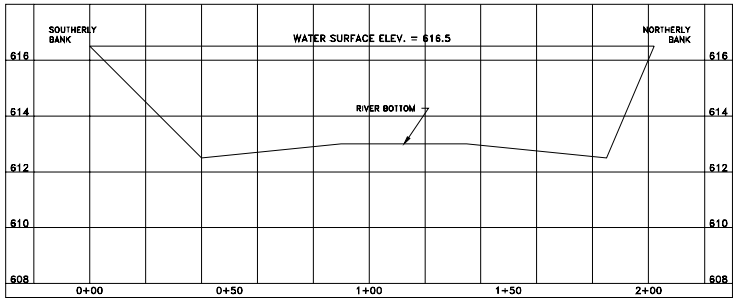
675'± UPSTREAM



175'± DOWNSTREAM



450'± UPSTREAM



275'± DOWNSTREAM

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Figure 5.1.1.2-3
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

MOMENCE ILLINOIS
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM
MOMENCE DAM – KANKAKEE RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: MRR	CHK'D: KDS
DESIGNED: –	APPRV'D: KSS
DATE: 25 January 2007	
HORIZONTAL SCALE: 1" = 20'	
VERTICAL SCALE: 1" = 2'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE
1	ELEV. LABLES NOW SHOW 1"=2' VERTICAL SCALE	MRR	1/26/07
2	Change Elevations	KDS	5/20/07

NOTES:
ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.
CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).
FIELDWORK OCCURED ON JANUARY 05, 2007

SHEET 2
OF 2
DRAWING NUMBER
9002TOM

W:\PROJECTS\9002\DWG\9002TOM.DWG

5.1.1.3 Conditions Assessment

1) Dam has no warning signs that address dam or public safety.
2) Dam has no significant embankment restraints, even though a river walk follows the upstream right bank
3) Tree growth on upstream right bank needs to be removed.
4) Large hole at right abutment / embankment needs to be repaired / filled.
5) Dam face and crest needs to be assessed during low flow to determine if any and / or the degree to which failure has occurred.
6) Removal of the dam may result in drying the upstream river bed. This concern should be addressed at if dam removal is considered.

5.1.2 Kankakee Dam

5.1.2.1 Existing Documentation

¶ **Dam and Location:**

Kankakee	Kankakee	Kankakee	Kankakee
Dam	IL	River	County

¶ **Ownership**
This dam is owned by the State of Illinois and leased to the City of Kankakee. (IDNR 2006)

¶ **History**
The history of this dam is unavailable. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR, September 2006.

5.1.2.2 Visual Reconnaissance

¶ **Dam and Location:**

Kankakee	Kankakee	Kankakee	Kankakee
Dam	IL	River	County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Dave Handwerk
Company: CTE Engineers

Name: Lee Guethle
Company: CTE Engineers

Name: Dan Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/11/2007; 2:00 pm to 4:00 pm (approximate)

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
Crest appears to be in good condition. Contains an inflatable "bladder" system with a steel plate fixed to the upstream face of the bladder. Used to raise the water surface for hydro-power operations. A section of the dam, roughly 1/3 of the total dam length, beginning from the left embankment was visible discolored. The cause was unknown.

Minor surface cracks at both abutments. Left abutment in good condition, right abutment some spalling and debris at dam crest.

¶ **Evidence of Roller**
Yes, the reverse roller (flow downstream below the water surface and upstream at the water surface) was roughly 20-30 ft wide along the entire length of the dam, and extremely turbulent, especially at right bank. It should be noted that the downstream right bank experienced a significant eddy and return flow with a roller length of about 50 ft., possibly due to the alignment of the left embankment wall.

¶ **Portages**
Two portage locations on the upstream left bank between the traffic bridges immediately upstream, one portage/boat ramp on the right bank downstream of traffic bridge immediately downstream of the dam. Neither had signage stating the existence of the portage or of the dam location. The trek between portages would be around 0.75 miles, under the rail road bridge and over a major roadway intersection. Portages were in good condition, 1' stepped concrete. Furthest upstream portage had a pulley/wench.

No portages were observed on the right bank.

¶ **Boat Restraints**
Yes, composed of a series of buoys strung on rope, upstream of the dam between the 2 immediately upstream bridges. These were not in-place at the time of the inspection, but were observed by IDNR during their inspection as shown in Figure 3.2.2.-1 and Photo 3.2.2.-10.

¶ **Shore Restraints**
The left abutment is a hydropower dam which is made inaccessible to the public by a barbed-wire fence. Fencing extends between the immediate upstream and downstream bridges from the dam.

The right bank has fencing and railing from the downstream bridge and several hundred feet upstream of the upstream bridge. The right abutment has a park/fishing area with a 4' 3" cast iron fence. The fence covers the entire embankment inside and outside (i.e. along road) of the park. Within the park, directly at the roller and eddy, (right abutment) there is a 3 ' slot opening in the fence designed, presumably, for wheel chair fishing access.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
The only warning signs present were related to the hydropower facility. One sign was located on the hydropower facility downstream wall that read “Hazardous Conditions” and “Turbulent Water Horn Will Sound”. Sign readable from 15 yards. The operators place a boat line (see ŏ Boat Restraints above) across the river during boating season; otherwise there are no warning signs for the dam on either of the two upstream bridges. There were no warning signs against fishing, swimming, etc. There was a warning sign at the downstream left embankment park stating that the stairs leading to the water were restricted; however, the sign was broken and laying on its side, not visible. Additional warning signs such as no trespassing (302) and danger keep out (301) were located on the right bank upstream of the structure.

¶ **Lighting**
Three flood lights are located at the left, downstream embankment fishing pavilion. Flood lights are present at the left, upstream embankment, at the entrance to hydropower plant. Lights were also present along the park fence on the right embankment. No lights were observed inside the fishing / park pavilion on the right embankment, except on the outer fence, which may or may not provide enough lighting. There was no lighting on the dam face evident.

¶ **Access (pedestrian, vehicular, emergency equipment)**
No vehicular access is available to the dam face. Access to the dam is most likely by boat.

The right upstream is inaccessible due to fencing. On the right downstream bank, a metal stairway leading from park is the only access to the water. The stairs lead into the water, roughly 20 ft from the natural bank downstream. The stairs are gated and locked by the hydropower plant, but the fire dept. has a key.

There is vehicular access to the left upstream bank between the upstream bridges next to the county engineer's building and private property with two sets of stairs/canoe portages. The left downstream

bank, below the bridge immediately downstream of the dam is accessible by vehicle at the local park, with one canoe portage. IDNR field inspectors observed fishermen wading in the water. Fishermen likely wade from the downstream left or right un-fenced areas or from boats docked near the dam face.

¶ EMS Interview Summary

Interviewed Assistant Chief Charmen with Kankakee Fire Department. He has 22 years of experience with the department. He can be reached at 815-593-0460.

1. Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   The department relies on its members trained in water rescues to lead a rescue effort. All members of the department have some water training. It is a small fire department, with 50 members. Fire fighters have gumby suits (floating suits). The general response plan order is: 1) Fire Engine at the scene. Men Tie off on shore and have flotation devices, attempt a rescue. 2) Ambulances arrive at the scene. 3) Boats launched at the nearest boat launch. 4) Region 7 mutual aid plan would bring up to 10 boats to the scene within 1 to 2 hours. Unfortunately, the department does not have a boat that can enter the roller.

2. Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   Boats occasionally get too close to dam and go over.

   In November 2005, boat came too close to the dam and went over.

   Several years prior, a man and his girlfriend went over dam.

   Fishermen have drowned in the boil, but many, many years back. Local residents are aware of how to be safe around the dam.

3. Are there any public education measures in place to promote dam safety?

   Assistant Chief Charmen said that the department did not have any programs in place.

4. Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   A boat that could enter the roller would be highly beneficial. Is State funding through the Lt. Governor available for this?

   Public education in response and prevention would be helpful.

   Assistant Chief Charmen referred me to the Police River Patrol as an additional source of information

Call to Kevin McGovern with the Kankakee police Department. He has 27 years of experience with the department. He was head of the River Patrol which now operates sporadically, since it is not fully funded. He can be reached at (815) 933-0400.

1. Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   All policemen have some training in water rescues. All officers carry life Frisbees with which rescues can be made.

2. Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

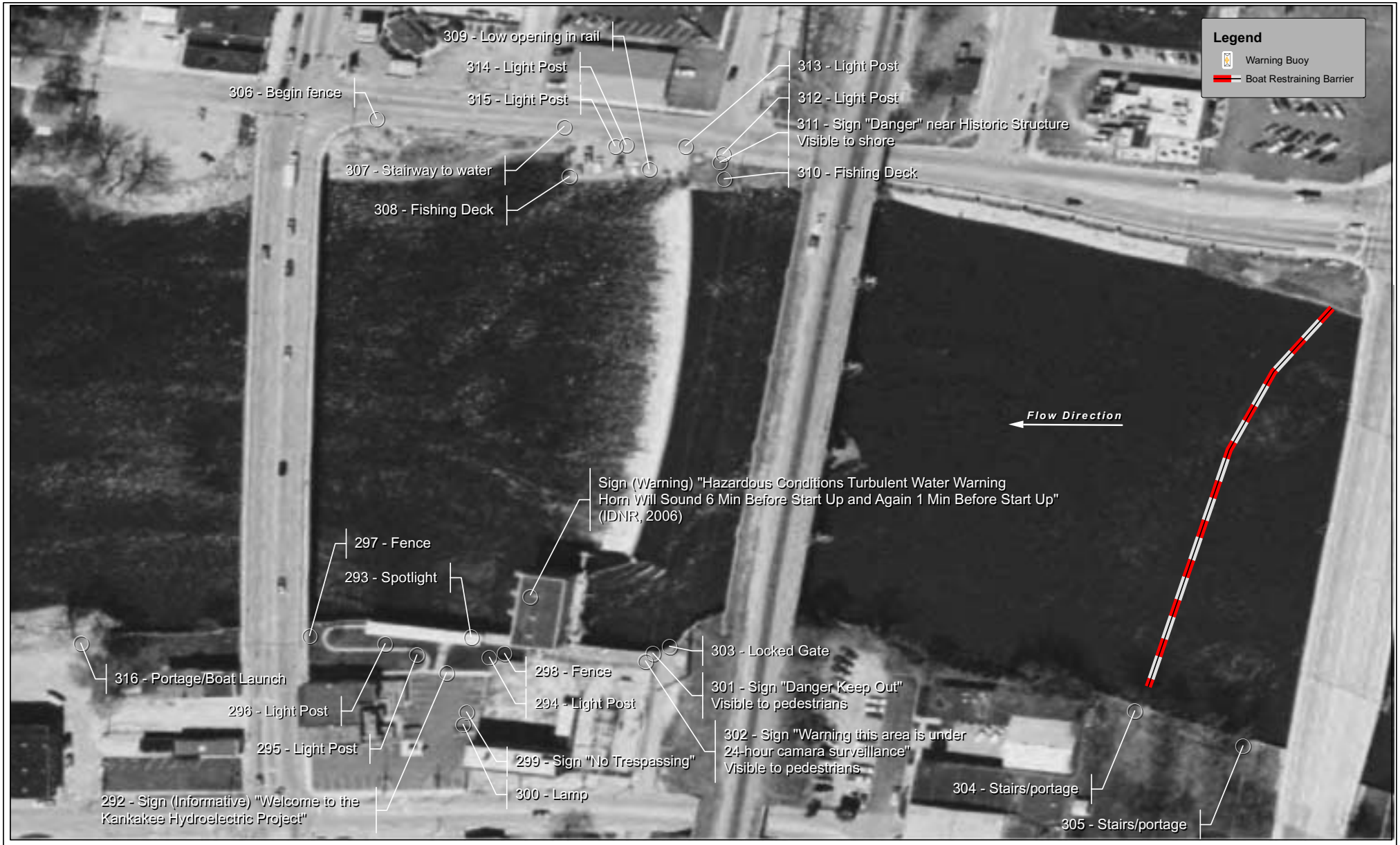
   Several people have gone over the dam. People jump from the upstream bridges, for fun, or get too close to the dam in boats. He recalled drownings that occurred in the roller when he was a child but none since then (?).

3. Are there any public education measures in place to promote dam safety?

   DNR and Coast guard offer classes for young boaters (under 18 years of age) that include dam safety.

4. Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   Education. People need to respect the water and should always wear life jackets.
   1) A ban on fishing at the dam would be impossible to enforce, due to insufficient manpower. Didn't believe fishing or swimming should be banned and that those were rights people have.



0 25 50 100 Feet

1 inch equals 101 feet

Kankakee Dam - Kankakee River

Kankakee, Illinois

CTE | AECOM

Figure 5.1.2.2-1

Kankakee

Photo 5.1.2.2 - 1 - Kankakee Dam, Kankakee River
Left bank at dam face. Kankakee Hydropower Dam and warning signage.

Photo 5.1.2.2 - 2 - Kankakee Dam, Kankakee River
Left Abutment at Hydropower Dam intake.

Photo 5.1.2.2 - 3 - Kankakee Dam, Kankakee River
View of dam from right bank.

Photo 5.1.2.2 - 4 - Kankakee Dam, Kankakee River
Left bank, downstream. Fishing area.

Photo 5.1.2.2 - 5 - Kankakee Dam, Kankakee River
Right bank, downstream fishing area. Note low spot in rail might pose hazard.

Photo 5.1.2.2 - 6 - Kankakee Dam, Kankakee River
Right bank, downstream. Access Stairway to downstream area of dam. Locked.

Photo 5.1.2.2 -7 - Kankakee Dam, Kankakee River
Dam face, from left bank. (IDNR, 2006)

Photo 5.1.2.2 - 8 - Kankakee Dam, Kankakee River
Fisherman near roller. (IDNR, 2006)

Photo 5.1.2.2 - 9 - Kankakee Dam, Kankakee River
Fisherman near roller. (IDNR, 2006)

Photo 5.1.2.2 - 10 - Kankakee Dam, Kankakee River
Boat line, looking downstream. (IDNR, 2006)

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Figure 5.1.2.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

KANKAKEE ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

KANKAKEE DAM – KANKAKEE RIVER
DAM SURVEY – PLAN VIEW

DRAWN: MRR	CHK'D. KDS
DESIGNED: –	APPRV'D: KSS
DATE: 29 January 2007	
SCALE: 1" = 50'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

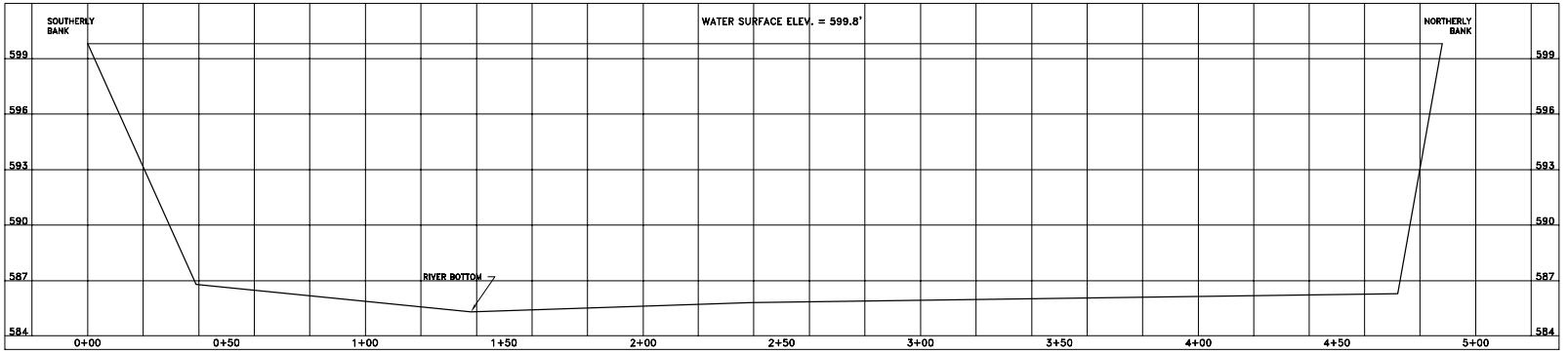
COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON NGS/OPUS DIFFERENTIAL GPS SOLUTION.

FIELDWORK OCCURED ON JANUARY 09, 2007

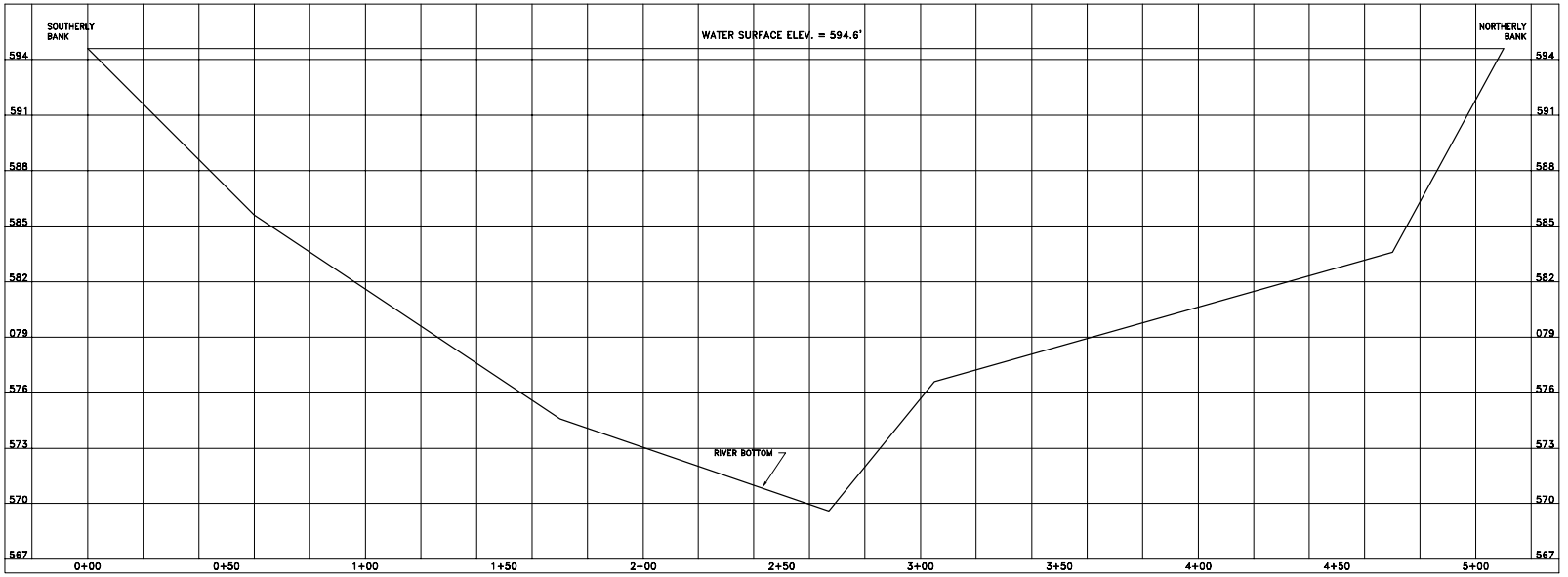
SHEET 1
OF 2

DRAWING NUMBER
9002TOK

M:\PROJ\07501\9002\TOPO\KANKAKEE DAM\9002TOK.DWG



225'± UPSTREAM



500'± DOWNSTREAM

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Figure 5.1.2.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

KANKAKEE ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

KANKAKEE DAM – KANKAKEE RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: MRR	CHK'D. KDS
DESIGNED: –	APPRV'D: KSS
DATE: 29 January 2007	
HORIZONTAL SCALE: 1" = 20'	
VERTICAL SCALE: 1" = 3'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

FIELDWORK OCCURED ON JANUARY 09, 2007

SHEET 2
OF 2

DRAWING NUMBER
9002TOK

M:\PROJ\07501-9002\TOPO\KANKAKEE DAM\9002TOK.DWG

5.1.2.3 Assessment

1) Based upon the discoloration seen along about a third of the dam face beginning from the left abutment, this could correspond to potential horizontal misalignment of the dam face; otherwise there were no obvious deficiencies visible.
2) There was debris along the right abutment upstream and on the dam crest. This should be cleaned.
3) On both the left and right banks downstream from the dam crest to the immediate downstream bridge there was fencing/railing adequate to restrain pedestrians.
4) There is a buoy strung rope boat restraint that is stretched across the river between the 2 immediate upstream bridges from the dam during the boating season to discourage boat traffic.
5) There are no upstream signs warning of the upcoming dam on either bank or on the two immediate upstream bridges.
6) The only warning signage was related to the hydro-power facility and were attached to the facility, and was limited to “No Trespassing” & “Danger”.
7) There was no lifesaving equipment visible at the dam abutments or on either downstream bank where the areas were fenced to protect pedestrians.
8) There is no direct access to the dam abutments. There is good vehicular access to downstream river reach extending from the dam crest to the immediate downstream bridge along both banks.
9) There are two unmarked portage locations on the upstream left bank between the 2 immediate upstream bridges. There is a portage/boat ramp along the left bank downstream of the bridge immediately downstream of the dam.
10) At the right abutment/dam interface the roller extended past the main roller of 20-30 ft. to a total length of 50 with a significant eddy and return flow only the right abutment. It maintained very high velocities and appeared to have a horizontal circular eddy component as well as the traditional vertical roller component.

5.1.3 Wilmington Dam

5.1.3.1 Existing Documentation

¶ Dam and Location:

Wilmington	Wilmington	Kankakee	Will
Dam	IL	River	County

¶ Ownership
This dam is owned by City of Wilmington and a private owner. (IDNR 2006)

¶ History
The history of this dam is unavailable. (IDNR 2006)

¶ Available Documents

Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

OWR Survey at Wilmington Dam, Kankakee River, Wilmington, IL. 2006.

5.1.3.2 Visual Reconnaissance

¶ **Dam and Location:**

Wilmington Dam	Wilmington IL	Kankakee River	Will County

¶ **Inspectors:**

Name: Daniel Tornil
Company: CTE Engineers

Name: David Handwerk
Company: CTE Engineers

¶ **Date & Time:** 1/22/2007 9:24 am to 11:15 am

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
Right abutment is composed of old stone/granite wall with some cracks. This abutment is in need of periodic inspection, because of age. Note: U/S side of abutment has a steep slope that was quite slippery and dangerous, due to snow and ice.

Left abutment is concrete with some deterioration and cracking. In need of periodic inspection, because of age.

¶ **Evidence of Roller**
Yes, the reverse roller (flow downstream below the water surface and upstream at the water surface) extends 20-25 feet. Branches were observed cycling in roller. Roller is very strong especially near the left bank.

¶ **Portages**
No marked portages were found on either of the right or left banks. A portage could be made at right abutment, which is very close to the dam. However, river users might attempt to bypass dam using right millrace and come upon the dangerous millrace dam. The left bank is private property with no portages. A “No Trespassing” sign was observed just downstream of dam.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
The right abutment has a 2' high stone wall with no rail. Wood rails along the parkway limit access to shore. The left abutment has a 3 foot high wall upstream of the dam face. Downstream of the dam face is no wall.

¶ **Lifesaving Equipment**
Yes, rescue buoy and life vest with throw ropes located on the right abutment adjacent to the dam crest.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
Multiple large, colorful warning signs on the right bank and throughout the park. Precautions to general public as well as to fisherman and boaters. Large sign to upstream river users: "Keep Back, Dangerous Dam". Left bank has no signage, except a "No Trespassing" sign facing the river. Both abutments have the word "DAM" spray-painted on them. Signs visible from about 30 yards.

No portage signage was observed.

¶ **Lighting**
No lighting observed at abutments. Small private lamp on left bank near abutment.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Along the right bank, there is pedestrian and vehicular access upstream, downstream and at the abutment. Emergency equipment can park near the abutment but are limited by a wood rail from parking on the abutment. The left upstream and downstream bank and abutment are private property. There is no vehicular access and is only accessible by residents or trespassers.

¶ **EMS Interview Summary**
Interviewed Fire Chief Salomy of Wilmington Fire Department. He has been with department since 1989. He can be reached directly at 815-476-6675 ext. 201.

1. Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   They have a standard water rescue plan. The fire department works simultaneously with the Wilmington Recovery Dive Team. The Dive Team also uses the abbreviations EMA (Emergency Management Agency) and ESDA (Emergency Service Defense Agency). The fire department handles the bank operations. The Dive Team has boats, divers and water rescue equipment. We should contact the dive team for specifics on their plan. Call Dennis or Rich at 815-476-2334.

   Chief Salomy estimated a response time of 3 to 5 minutes. His department is on call, but has 4 full-time personnel on duty at all times.

2. Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

Yes many at the main Wilmington Dam. Too many to recall without research. Call back if you would like the department to research it. The dive team may have an easier time providing such statistics.

Stated that 2006 was a very bad year. There were three incidents at the Wilmington Dam. The notable triple drowning in 2006 had seven persons altogether.

Accidents have been in a variety of forms, including canoeists going over the dam, people playing near the dam, and even people falling off the abutment.

Chief Salomy believes very few of the accidents involved local residents. He stated many people come to visit and are unfamiliar with the dam. The conditions of the flow are also variable and dependent on rainfall upstream. Rainfall in Indiana can cause large unexpected flows in the river. Flows at times have flooded the adjacent park.

On holidays, the park can be filled with hundreds of people at or around the dam.

3. Are there any public education measures in place to promote dam safety?

None in place. Chief Salomy stated that local people have been there for generations and know about the dam. People know not to allow their kids in the area. Visitors are in greatest danger.

4. Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

To avoid the most accidents, people should not be allowed in the water. Removal of the dam would eliminate the problem, but fisherman would protest, since local people are being punished for the ignorance of visitors. The chief believed that removal of the dam would cause the millrace and some of the upstream to dry up.

0 25 50 100 Feet

1 inch equals 101 feet

Wilmington Dam - Kankakee River

Wilmington, Illinois

CTE | AECOM

Figure 5.1.3.2-1

Wilmington

Photo 5.1.3.2 -1 - Wilmington Dam, Kankakee River
Dam face from left abutment. View of very strong roller.

Photo 5.1.3.2 - 2 - Wilmington Dam, Kankakee River
Life saving equipment on right abutment.

Photo 5.1.3.2 - 3 - Wilmington Dam, Kankakee River
Large letter warning sign on right bank.

Photo 5.1.3.2 - 4 - Wilmington Dam, Kankakee River
Large letter warning sign for fishermen on right bank.

Photo 5.1.3.2 - 5 - Wilmington Dam, Kankakee River
Large elevated warning sign for upstream river users, at right abutment.

Photo 5.1.3.2 - 6 - Wilmington Dam, Kankakee River
View of various signage on right abutment.

Photo 5.1.3.2 - 7 - Wilmington Dam, Kankakee River
Fishermen near dam. (IDNR, 2006)

Photo 5.1.3.2 - 8 - Wilmington Dam, Kankakee River
Fishermen at dam. (IDNR, 2006)

5.1.3.3 Assessment

1) Lack of guard rails at either dam abutment.
2) No portages on either bank of the river. The more turbulent portion of the roller on the left bank is coupled with the lack of EMS access to that side.
3) Several large legible warning signs addressing boating, fishing and swimming are positioned on the right upstream bank. There are no warning signs on the left upstream bank other than "Dam" spray painted on the left upstream portion of the abutment.
4) There is good vehicular and pedestrian access to the right upstream bank, abutment and downstream bank.
5) No warning signage for river users choosing the millrace to the right of the dam. Portaging and/or coming upon the Wilmington Millrace Dam, presents a potentially dangerous situation.
6) The proximity of the dam to multiple recreational uses likely attracts large numbers of people during the warm season. These activities include fishing, canoeing/kayaking/boating as well as activities at the adjacent park, including picnicking and participation in various recreational sports such as little league baseball.
7) Lifesaving equipment located on the right abutment consists of an inflatable life ring and 60 ft. of nylon rope and 1 life vest with 30 ft. of hemp rope.
8) There is no lifesaving equipment on the left abutment.

5.1.4 Wilmington Millrace Dam

5.1.4.1 Existing Documentation

¶ **Dam and Location:**

Wilmington Millrace Dam	Wilmington IL	Kankakee River	Will County

¶ **Ownership**
This dam is owned by City of Wilmington. (IDNR 2006)

¶ **History**
The history of this dam is unavailable. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

OWR Survey at Wilmington Dam, Kankakee River, Wilmington, IL. 2006.

5.1.4.2 Summary of Existing Conditions

¶ **Dam and Location:**

Wilmington Millrace Dam	Wilmington IL	Kankakee River	Will County

¶ **General Dam & River Bank Condition**
Dam appears to have been constructed from large concrete blocks and has partially failed near the left abutment. The partial failure has resulted in a series of drops over approximately 60 feet. The total drop is approximately 10 feet. The right abutment is concrete with some deterioration and cracking and is in need of inspection. Left abutment appears to be a breached retaining wall which resulting in the partial failure. Its condition is uncertain and should be inspected.

¶ **Evidence of Roller**
The main feature of this dam is heavy whitewater rapids over the 60 foot by 10 foot drop across the partial failure.

¶ **Portages**
No marked portages on right or left banks upstream or downstream. A canoe/boat launch was observed upstream of the dam and immediate upstream bridge on the left bank.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
None observed.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
There are two (2) large, colorful warning signs on the left bank, near the abutment and an additional warning sign at the nearby park, see photo 3.2.4.2-2. The sign in the left background of the photo reads “Emergency information if you hear a steady siren for 2 minutes tune your radio to (then 2 AM and 2 FM stations)”. These signs are precautions to the general public as well as to fisherman and boaters. The right bank/abutment has no warning signs. There are no warning signs visible to river users or any upstream signs to warn of the dam.

No portage signage was observed.

¶ **Lighting**
No lights were observed at abutments. There is a light in the alley on the right bank.

¶ **Access (pedestrian, vehicular, emergency equipment)**
On left bank, there is an access road leading up to the abutment. Access is limited to the millrace by brush and uneven terrain. The right abutment is accessible by foot, but with great difficulty. There is pedestrian and vehicular access to upstream right bank from an alley.

¶ **EMS Interview Summary**
Interviewed Fire Chief Salomy of Wilmington Fire Department. He has been with department since 1989. He can be reached directly at 815-476-6675 ext. 201.

1. Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   They have a standard water rescue plan. The fire department works simultaneously with the Wilmington Recovery Dive Team. The Dive Team also uses the abbreviations EMA (Emergency Management Agency) and ESDA (Emergency Service Defense Agency). The fire department handles the bank operations. The Dive Team has boats, divers and water rescue equipment. We should contact the dive team for specifics on their plan. Call Dennis or Rich at 815-476-2334.

   Chief Salomy estimated a response time of 3 to 5 minutes. His department is on call, but has 4 full-time personnel on duty at all times.

2. Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   Yes many at the main Wilmington Dam. Too many to recall without research. Call back if you would like the department to research it. The dive team may have an easier time providing such statistics.

   Stated that 2006 was a very bad year. There were three incidents at the Wilmington Dam. The notable triple drowning in 2006 had seven persons altogether.

   Accidents have been in a variety of forms, including canoeists going over the dam, people playing near the dam, and even people falling off the abutment.

   Chief Salomy believes very few of the accidents involved local residents. He stated many people come to visit and are unfamiliar with the dam. The conditions of the flow are also variable and dependent on rainfall upstream. Rainfall in Indiana can cause large unexpected flows in the river. Flows at times have flooded the adjacent park.

   On holidays, the park can be filled with hundreds of people at or around the dam.

3. Are there any public education measures in place to promote dam safety?

   None in place. Chief Salomy stated that local people have been there for generations and know about the dam. People know not to allow their kids in the area. Visitors are in greatest danger.

4. Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   To avoid the most accidents, people should not be allowed in the water. Removal of the dam would eliminate the problem, but fisherman would protest, since local people are being punished for the ignorance of visitors. The chief believed that removal of the dam would cause the millrace and some of the upstream to dry up.

0 50 100 200 Feet

1 inch equals 200 feet

Wilmington Millrace Dam - Kankakee River

Wilmington, Illinois

CTE | AECOM

Figure 5.1.4.2-1
Wilmington
Millrace

Photo 5.1.4.2- 1 - Wilmington Millrace Dam, Kankakee River
Bridge upstream of dam. No warning signage for downstream dam.

Photo 5.1.4.2- 2 - Wilmington Millrace Dam, Kankakee River
Large letter warning sign on left bank.

Photo 5.1.4.2- 3 - Wilmington Millrace Dam, Kankakee River
View of dam from downstream.

Photo 5.1.4.2- 4 - Wilmington Millrace Dam, Kankakee River
Dam at upstream.

Photo 5.1.4.2- 5 - Wilmington Millrace Dam, Kankakee River
Dam at downstream. Abutments visible.

Photo 5.1.4.2- 6 - Wilmington Millrace Dam, Kankakee River
Fishermen downstream of dam. (IDNR, 2006)

DLZ
DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, INDIANA 46304
TELEPHONE (219) 764-4700 FAX (219) 764-4156

Figure 5.1.4.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

WILMINGTON ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

MILLRACE DAM – KANKAKEE RIVER
DAM SURVEY – PLAN VIEW

DRAWN: MRR	CHK'D. KDS
DESIGNED: –	APPRV'D: KSS
DATE: 29 January 2007	
SCALE: 1" = 50'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

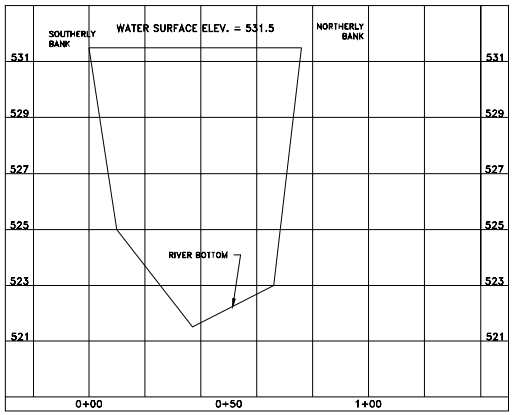
COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON NGS/OPUS DIFFERENTIAL GPS SOLUTION.

FIELDWORK OCCURED ON JANUARY 08,2007

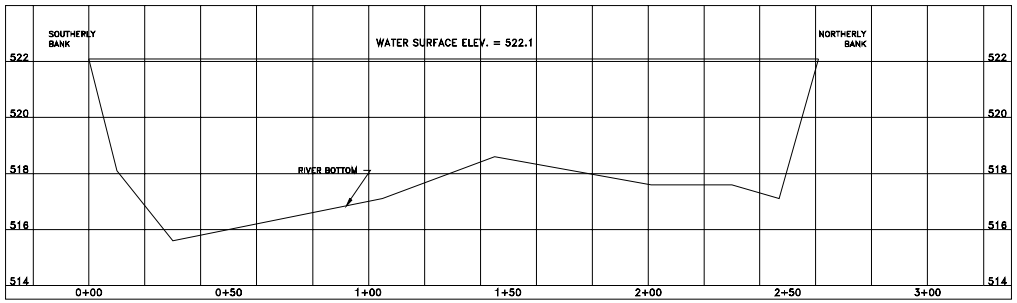
SHEET 1
OF 2

DRAWING NUMBER
9002TOW

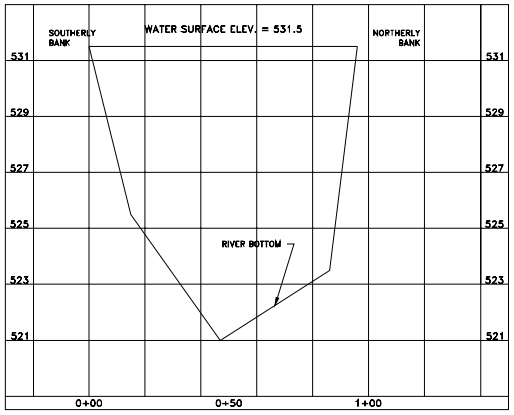
M:\PROJ\0750\9002\TOPO\WILMINGTON_MILLRACE DAM\9002TOW.DWG



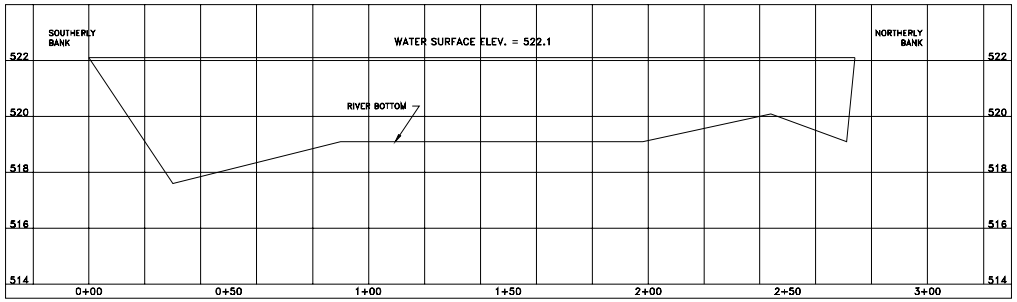
535'± UPSTREAM



90'± DOWNSTREAM



350'± UPSTREAM



170'± DOWNSTREAM

DLZ
DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, INDIANA 46304
TELEPHONE (219) 764-4700 FAX (219) 764-4158

Figure 5.1.4.2-3
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

WILMINGTON ILLINOIS
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM
MILLRACE DAM – KANKAKEE RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: MRR	CHK'D: KDS
DESIGNED: –	APPRV'D: KSS
DATE: 29 January 2007	
HORIZONTAL SCALE: 1" = 20'	
VERTICAL SCALE: 1" = 2'	
PROJECT NUMBER	
0750 – 9002	

NO.	REVISION	BY	DATE
1	Change Elevations	KDS	5/29/07

NOTES:
ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.
CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).
FIELDWORK OCCURED ON JANUARY 08,2007

SHEET 2
OF 2
DRAWING NUMBER
9002TOW

M:\PROJ\07\0750\9002\TOPO\MILLRACE DAM\9002TOW.DWG

5.1.4.3 Assessment

1) The dam is partially breached.
2) Although the dam is remote, it seems to attract fishermen to its heavy currents. This dam might also attract kayakers interested in testing the white water rapids produced by the breach.
3) The dam has no warning signage on the right bank for river users who might happen to go through the Millrace.
4) There are large warning signs at the dam on the left bank. These may be visible to boaters but should be better placed. Both are located to close to the dam even if visibility were not an issue.
5) There is no warning signage for pedestrians on right bank.
6) The abutments do not have shore restraints to limit pedestrian access.
7) The dam has a very rapid current and a great deal of debris and obstacles through the breached section.
8) There are no marked portages in the vicinity of this dam.

5.2 Rock River Dams

5.2.1 Oregon Dam

5.2.1.1 Existing Documentation

¶ Dam and Location:

Oregon	Oregon	Rock	Ogle
Dam	IL	River	County

¶ Ownership
This dam is owned by the State of Illinois. (IDNR 2006)

¶ History
The history of the dam is not available. (IDNR 2006)

¶ Available Documents
Personal Safety at Run-of-River Dams on Public Waters in Illinois. IDNR. September 2006.

Dam Inspection Report, Illinois Department of Natural Resources, December 2005.

5.2.1.2 Visual Reconnaissance

¶ **Dam and Location:**

Oregon	Oregon	Rock	Ogle
Dam	IL	River	County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: Daniel J. Hirsch
Company: Kabbes Engineering

¶ **Date & Time:** 1/29/07, 11:00am – 1:30pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete.

¶ **General Dam & River Bank Condition**
Good, abandoned dam works on right bank but well fenced, left abutment shows some structural degradation.

¶ **Evidence of Roller**
Yes, reverse roller extending approximately 5-15 feet from dam.

¶ **Portages**
Not marked, on right bank.

¶ **Boat Restraints**
Not visible.

¶ **Shore Restraints/Access Limits**
Fencing on both banks at dam.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
Detailed warning signs on both downstream banks; no swimming signs on upstream left bank and right abutment; skull and crossbones graffiti on abandoned dam works on right abutment.

No warning buoys were noted at this visual reconnaissance, however IDNR noted six (6) seasonal warning buoys upstream of the dam as shown on figure 3.3.1.2-1 and Photo 3.3.1.2-2.

¶ **Lighting**
None observed.

¶ **Access (pedestrian, vehicular, emergency equipment)**
From both banks good public access and easy water access upstream and downstream.

¶ **EMS Interview Summary**

Call to Oregon City Hall
Directed to Ogle County Sheriff, 815-732-2136, 'They handle all of our 911 calls, Sandy Beitel, 911 Center Coordinator:

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   "Protocol is: we get 911 call, we dispatch Oregon Fire & EMS. They have a boat and they have divers. They are located right next to the dam. They should be there in less than 5 minutes. Oregon FD is all volunteer, head is Don Heller, home number 815-732-2136"

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   'Yes a number. People come from Chicago; the fisherman walk into river and do not know how dangerous it is. There was one last year.'

3) Are there any public education measures in place to promote dam safety?

   'None that I know of.'

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

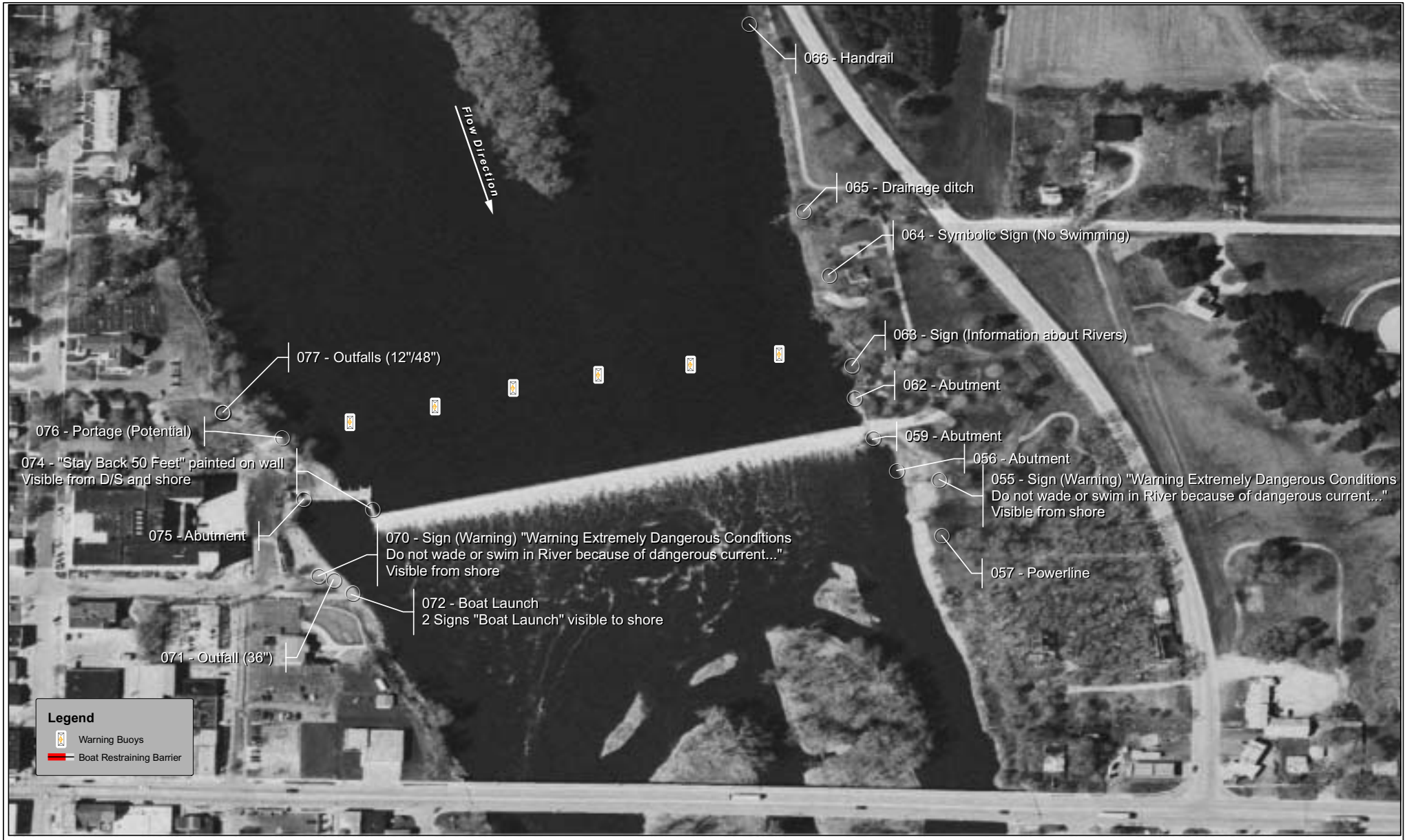
   Called Don Heller

1) Yes, we have dive rescue recovery team. Work with MAVIS Division, can also get support from Byron Diving and also Winnebago County. They can have divers in the water in 5 minutes.

2) Last year, two drownings in 1 incident. The upstream side of the dam had been filled creating a relatively shallow area. Individuals fishing have fallen and been swept over dam and drowned. Ten years ago a Laotian individual suffered similar fate.

3) Signage. Mostly on Park District property.

4) More public education on hazards. Alcohol did not play a part. Apparently a number of these victims had been fishing for catfish, had a number of 'good sized catfish' (2-3 lb.) on a stringer tied to their belt and this may have caused them to get pulled over the dam. "



0 50 100 200 Feet

1 inch equals 200 feet

Oregon Dam - Rock River

Oregon, Illinois

CTE | AECOM

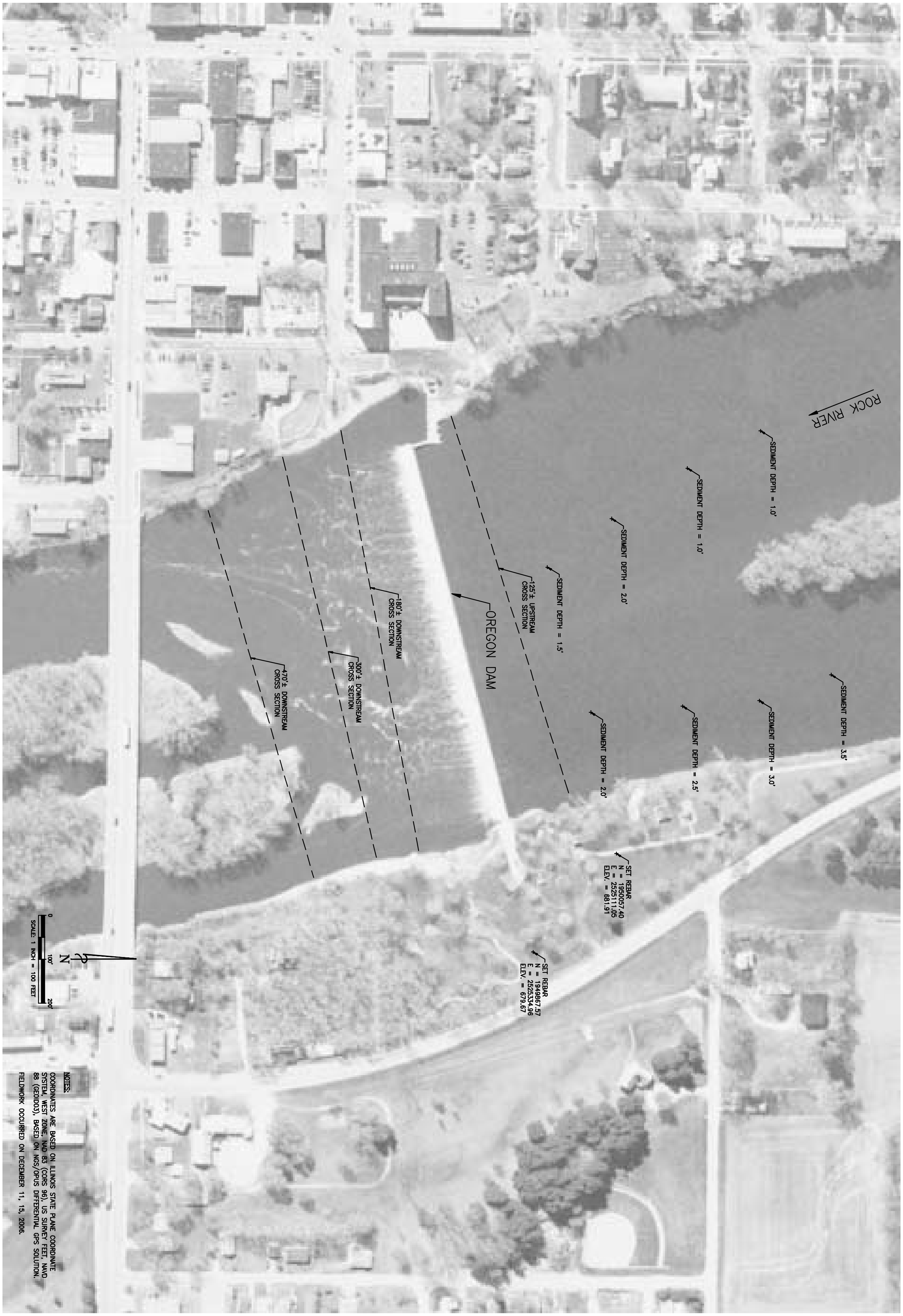
Figure 5.2.1.2-1
Oregon

Photo 5.2.1.2 – 1 – Oregon Dam, Rock River
Dam from Right Bank. Note Warning on Abutment. (IDNR, 2006)

Photo 5.2.1.2 – 2 – Oregon Dam, Rock River
Seasonal Warning Buoys. (IDNR, 2006)

Photo 5.2.1.2 – 3 – Oregon Dam, Rock River
Warning Signage on Left Bank, Downstream of Abutment
This sign posted on left and right banks below dam.

Photo 5.2.1.2 – 4 – Oregon Dam, Rock River
Warning Signage on Left Bank, Above dam.



Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 3
1 OF 2

Client:

FIGURE 5.2.1.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Sheet Title:

OREGON DAM - ROCK RIVER
OGLE COUNTY, ILLINOIS
DAM SURVEY - PLAN VIEW

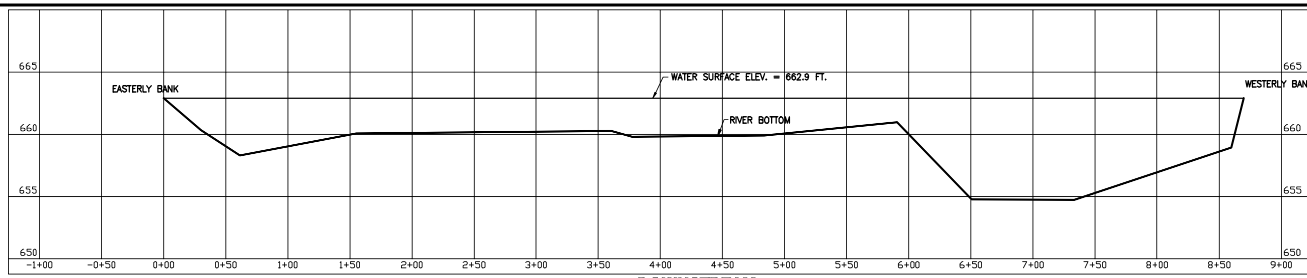
Project:

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

MAURER-STUTZ, INC.
ENGINEERS SURVEYORS
"WORKING with YOU by DESIGN"
7615 NORTH HARKER DRIVE
PEORIA, ILLINOIS 61615
PH. (309) 693-7615
FAX (309) 693-7616
1670 EAST ASH STREET
CANTON, ILLINOIS 61520
PH. (309) 647-7831
FAX (309) 647-6155
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

REVISIONS

No.	Date	Description



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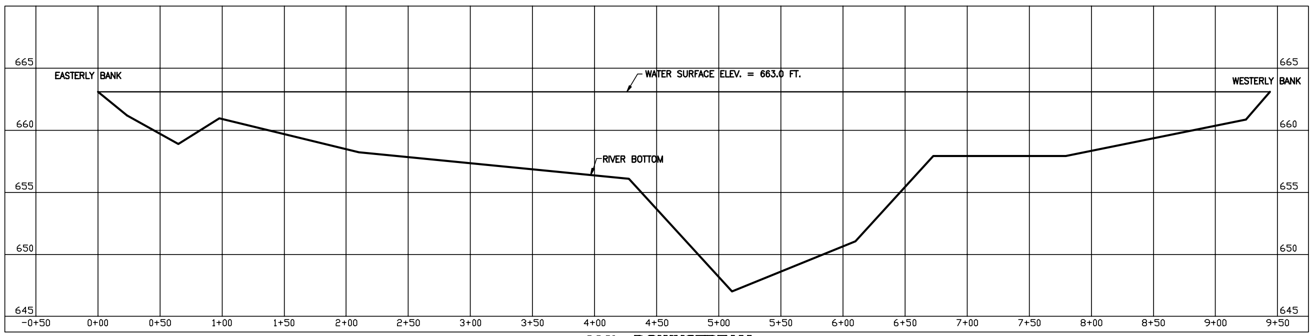
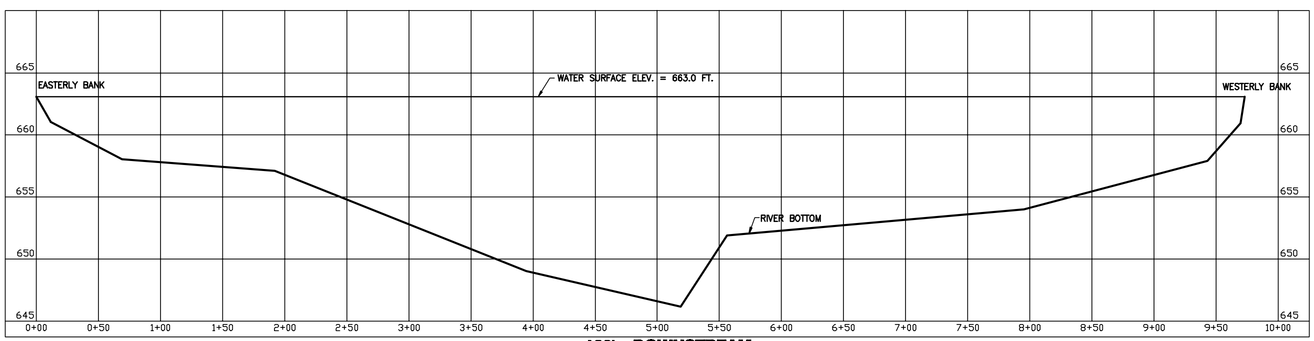
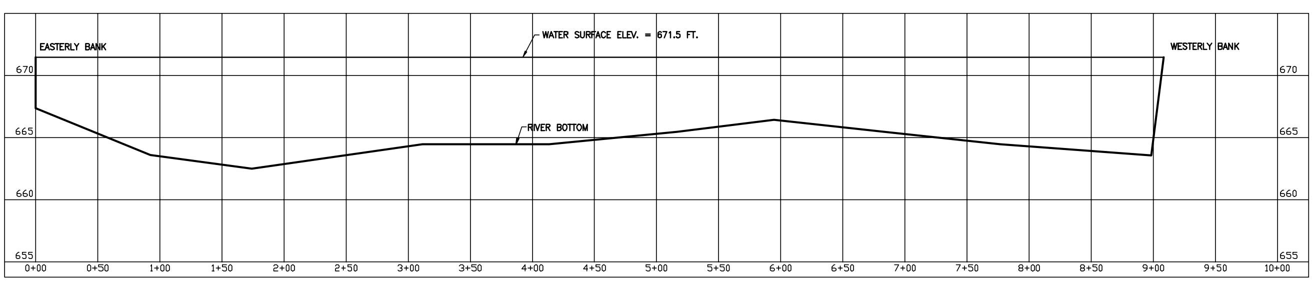


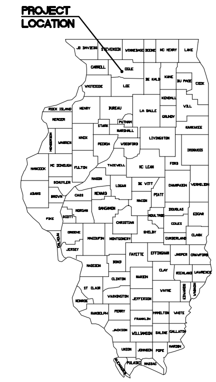
300'± DOWNSTREAM



180'± DOWNSTREAM



125'± UPSTREAM



0 50' 100' HORIZONTAL
0 5' VERTICAL
SCALES

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

REVISIONS		
No.	Date	Description
1	1/28/07	Revised cross sections

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1670 EAST ASH STREET CANTON, ILLINOIS 61520 PH. (309) 647-7831 FAX (309) 647-6155
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

Sheet Title:
OREGON DAM - ROCK RIVER
OGLE COUNTY, ILLINOIS
DAM SURVEY - CROSS SECTIONS

Project:
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

Client:
FIGURE 5.2.1.2-3
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Designed By: **N/A**
Drawn By: **NDP**
Reviewed By: **ADC**
Date: **18 December 2006**
Project No.: **232-06058**
Drawing: 3

2 OF 2

S:\232\23206058\eagle point\oregon.dwg

5.2.1.3 Assessment

1) No signage was visible upstream of dam warning of dam downstream when inspection was performed.
2) Parks are located on both the right and left banks that give the public easy access to the water. There is no fencing except around the left and right abutments.

5.2.2 Sinnissippi Dam

5.2.2.1 Existing Documentation

¶ Dam and Location:

Sinnissippi Dam	Rock Falls IL	Rock River	Whiteside County

¶ Ownership
The dam is owned by the State of Illinois. (IDNR 2006)

¶ History
The Sinnissippi Dam was constructed by the U.S. Army Corps of Engineers in 1907. The original purpose of the dam was to divert flow into the Illinois-Mississippi Feeder Canal located just upstream of the dam's left abutment. The dam also creates a recreation pool in the Rock River and provides the hydraulic head needed for hydroelectric power generation. The Rock River Light and Power Company constructed a hydroelectric power plant adjacent to the right dam abutment in 1914. After years of service the plant was closed and finally demolished in 1977. The concrete substructure of the plant was then filled with rock and abandoned. Ownership of the dam was transferred to the State of Illinois in 1970. A new hydroelectric power plant was constructed by the City of Rock Falls in the abandoned navigation lock next to the left abutment and has been in operation since 1988. The State of Illinois reconstructed the dam and gates in 2002-2003 under FR-402 at a cost of $9,718,400. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

FR 402 - Record Plans for reconstructed Sinnissippi Dam, Sterling- Rockfalls, Pneumatic gate Alternative, IDNR, Office of Water Resources, April 2000.

OWR Survey at Sinnissippi Dam, Rock River, Rock Falls, IL. 2006.

5.2.2.2 Visual Reconnaissance

¶ **Dam and Location:**

Sinnissippi Dam	Rock Falls IL	Rock River	Whiteside County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: Daniel J. Hirsch
Company: Kabbes Engineering

¶ **Date & Time:** 1/28/07, 1:00pm to 3:30pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete.

¶ **General Dam & River Bank Condition**
Dam spillways and appurtenances are well marked. Only issue is trees need to be cut down on upstream earthen embankment on right bank and vandalized signage for right bank portage needs to be replaced.

¶ **Evidence of Roller**
Yes, reverse roller at discharge gates 5' – 10' out. Gates' position individually controlled by inflatable "bladders".

¶ **Portages**
Yes, on right bank.

¶ **Boat Restraints**
Yes, composed of a series of buoys strung on rope. These were not in-place at the time of the inspection, but were observed by IDNR during their inspection as shown in Figure 3.3.2.2-1.

¶ **Shore Restraints/Access Limits**
Well fenced on left bank and fencing is proposed for proposed walkway across dam to right bank. Right bank spillway is well fenced.

¶ **Lifesaving Equipment**
On dam.

¶ **Emergency Call Box**
On dam.

¶ **Warning/Information Signage**
Yes, sign on left bank fence describing dam roller. Sign reads "Danger Hazardous Recirculating currents below this dam can trap and drown a victim", see Photo 3.3.2.2-4. Yes, warning signs facing upstream on both banks, warning signs normally on dam were removed during construction. Left abutment fencing had warning sign depicting roller effect; informational signs on right bank identifying portage, with some defaced. There is a defaced portage sign on the upstream right bank, see Photo 3.3.2.2-1. There is a portage trail sign at portage located at the downstream right bank. Obsolete sign warning of lock operation-lock is defunct, now discharge bay for hydroelectric plant.

No warning buoys were noted at this visual reconnaissance, however IDNR noted seven (7) seasonal buoys upstream of the dam as shown on Figure 3.2.2.2-1.

¶ **Lighting**
Yes.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Easy access from left bank, more difficult on right bank as only access to shore from land is through tunnel under railroad embankment.

¶ **EMS Interview Summary**
Call to Sterling FD Spoke to Fire Chief Arlyn Oetting, 40 years experience in the area.

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   'They do not have a specific plan for incidents at the dam. They respond to 911 calls with 7-9 personnel; they have two boats and have locations close to the two dams: 10 blocks Sinnissippi and 4 blocks to Sterling. Chief estimates arrival within 90 seconds of notification. They can launch above or below either dam. They have an aid agreement with Rock Falls and cooperate in these responses.'

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

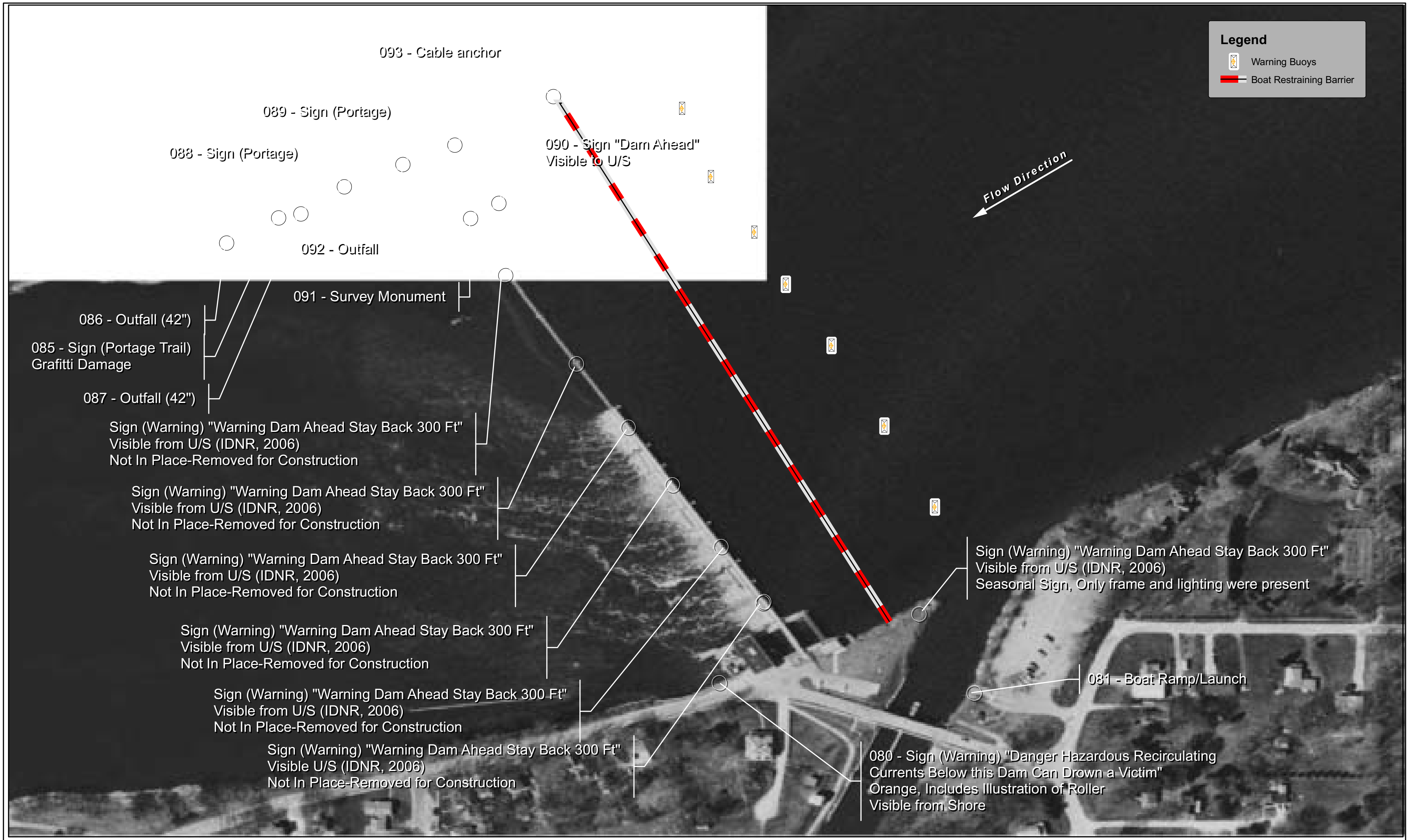
   'Did not recall a drowning on the lower dam. Did recall a number of rescues. One boater below Sterling Dam (not in immediate vicinity of dam) was fishing during April high water conditions. Dropped anchor, when anchor caught water velocity sank the boat. Successfully rescued the fisherman. Rescued three young fishermen who had climbed out on adjacent bridge structure. One fatality in early 80's, boy had been fishing, body was recovered below dam, found because of floating minnow bucket. Have rescued boaters and waders in Sinnissippi pool above Sinnissippi Dam caught on sand bar."

3) Are there any public education measures in place to promote dam safety?

'Signage. Also Clinton Iowa has a USCG Auxiliary Power Squadron, voluntary group, that periodically offers river safety seminars. They have advertised these seminars in area newspapers in the past. Their main focus is Mississippi River boaters, as Rock is not navigable.'

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

'Some form of public education. Better enforcement of boating/alcohol regulations. More common sense: "If you don't know, don't go."



0 50 100 200 Feet

1 inch equals 200 feet

Sinnissippi Dam - Rock River

Rockfalls, Illinois

CTE | AECOM

Figure 5.2.2.2-1

Sinnissippi

Photo 5.2.2.2 - 1 - Sinnissippi Dam, Rock River
Defaced portage sign on right bank

5.2.2.2 - 2 - Sinnissippi Dam, Rock River
Looking shoreward from right bank: note trees stumps on left, downstream, and trees to be cut on right, upstream face of dam.

5.2.2.2 - 3 - Sinnissippi Dam, Rock River
Looking upstream from left bank; roller visible clearly.

5.2.2.2 - 4 - Sinnissippi Dam, Rock River
Excellent signage upstream on left bank.

5.2.2.2 - 5 - Sinnissippi Dam, Rock River
Warning Signage on Dam Face. (IDNR, 2006)

5.2.2.2 - 6 - Sinnissippi Dam, Rock River
Warning Signage on Bank. (IDNR, 2006)

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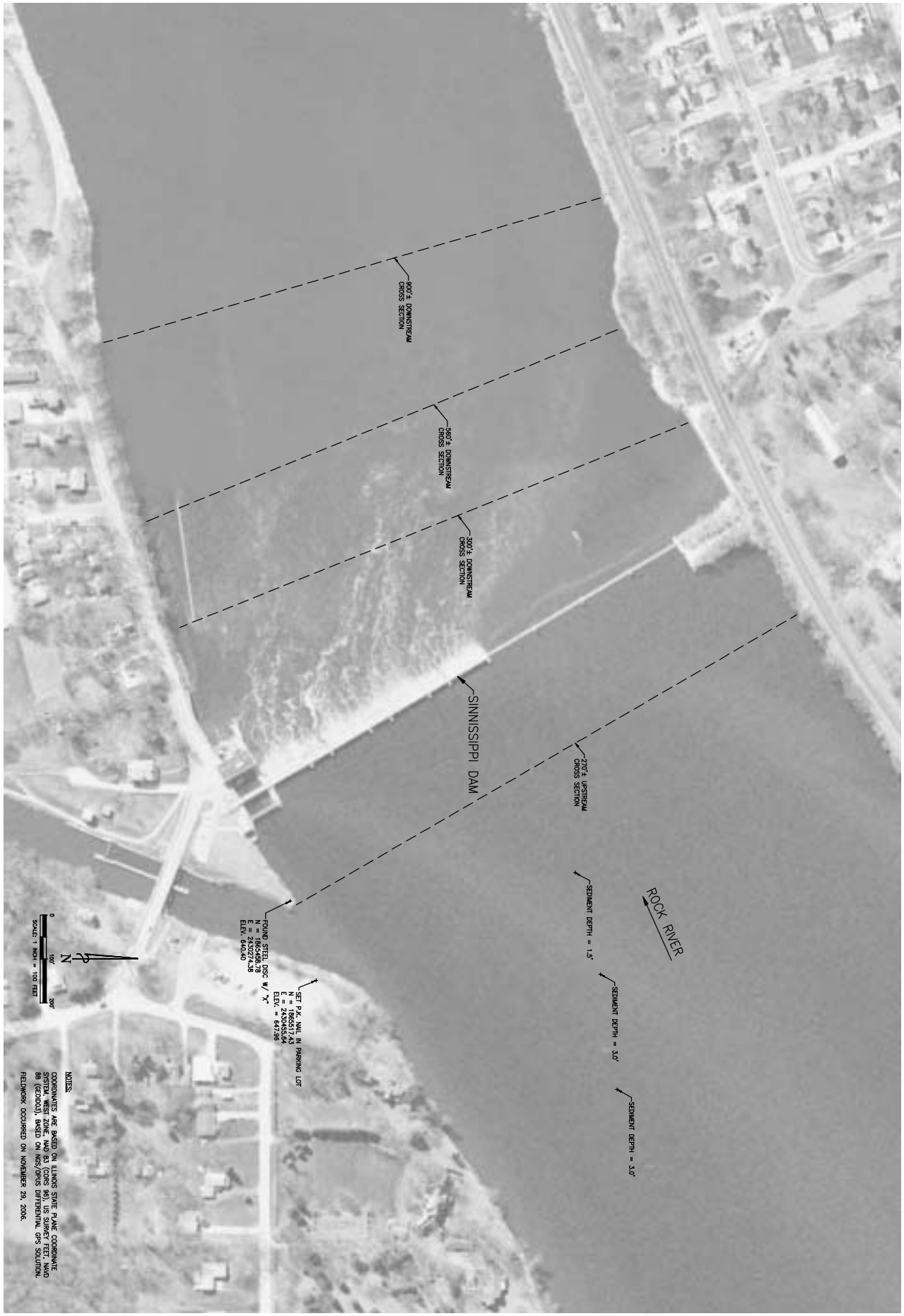

NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON NGS/OPUS DIFFERENTIAL GPS SOLUTION.

FIELDWORK OCCURRED ON NOVEMBER 29, 2006.

Client:
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

FIGURE 5.2.2.2-2

Sheet Title:
SINNISSIPPI - ROCK RIVER
WHITESIDE COUNTY, ILLINOIS
DAM SURVEY - PLAN VIEW

Project:
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

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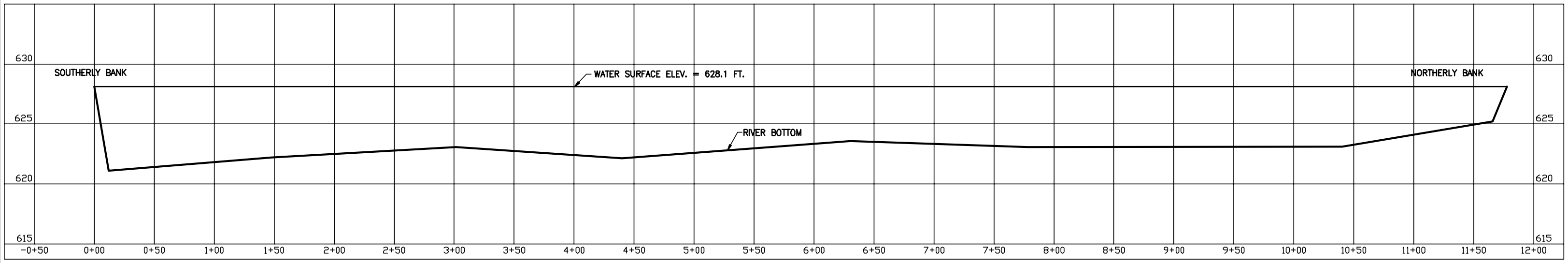
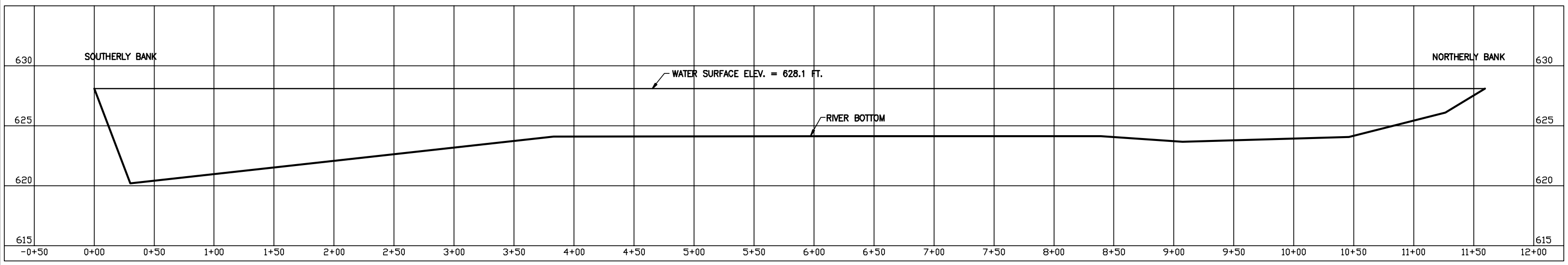
REVISIONS

No.	Date	Description

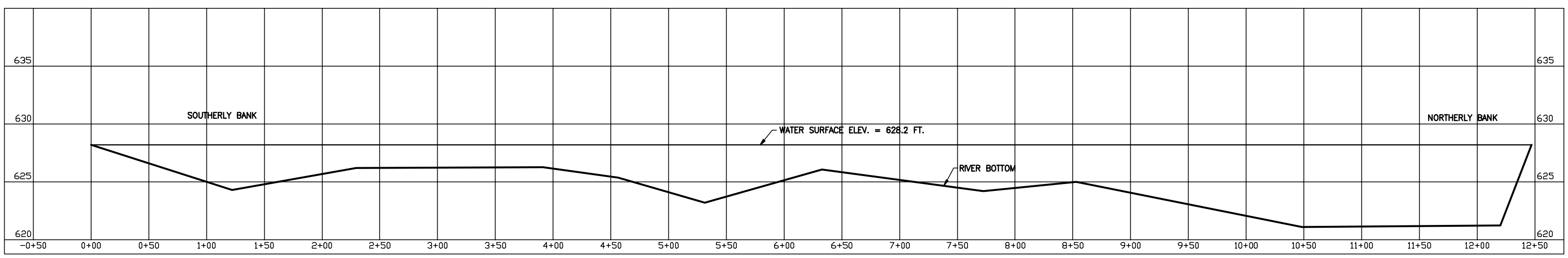
Designed By: MA
Drawn By: KDP
Reviewed By: ADC
Date: 19 December 2006
Project No.: 2320806ff
Drawing: 4
1 OF 2



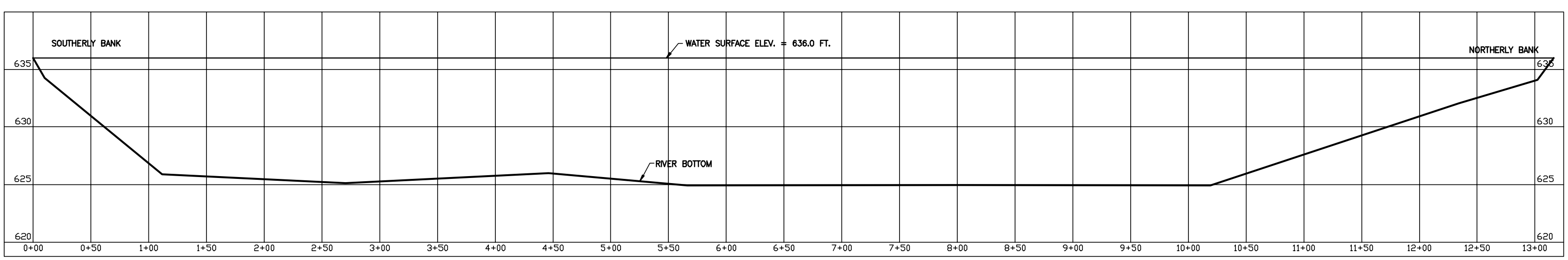
900'± DOWNSTREAM



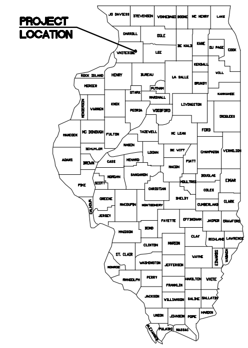
560'± DOWNSTREAM



300'± DOWNSTREAM



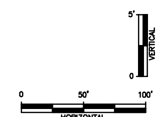
270'± UPSTREAM



NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).



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REVISIONS

No.	Date	Description

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ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

Sheet Title: SINNISSIPPI - ROCK RIVER
WHITESIDE COUNTY, ILLINOIS
DAM SURVEY - CROSS SECTIONS

Project: DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

Client: CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

FIGURE 5.2.2.2-3

Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 4
2 OF 2

5.2.2.3 Assessment

1) Dam has some warning signage that clearly define the danger. These are to close to the dam and are difficult for boaters to see, though portage signs for right bank portage need to be repaired/replace due to vandalism.
2) Tree growth on upstream side of right bank earthen abutment needs to be removed as was done on downstream side.

5.2.3 Lower Sterling Dam

5.2.3.1 Existing Documentation

¶ Dam and Location:

Lower Sterling/Lower Rock Falls	Rock Falls	Rock	Whiteside
Dam	IL	River	County

¶ Ownership
This dam is owned by the City of Rock Falls. (IDNR 2006)

¶ History
The history of the dam is not available. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

5.2.3.2 Visual Reconnaissance

¶ **Dam and Location:**

Lower Sterling/Lower Rock Falls	Rock Falls	Rock	Whiteside
Dam	IL	River	County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: Daniel J. Hirsch
Company: Kabbes Engineering

¶ **Date & Time:** 1/29/07, 3:00pm – 4:30pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete.

¶ **General Dam & River Bank Condition**
Dam condition, no obvious visual deficiencies were noted. Abutments: left bank old mill race incorporated into concrete vertical structure, access for fishing platform, onshore left bank is dilapidated factory possibly being demolished or failing.

¶ **Evidence of Roller**
5-15' roller downstream of toe.

¶ **Portages**
Urban environment, large riprap shore structure upstream. Right bank is accessible only via private property with gated parking lot. Township boat launch is located immediately upstream of dam on left bank. No visible easy put in location downstream of dam on left bank.

¶ **Boat Restraints**
Yes, composed of a series of buoys strung on rope, upstream of the dam. These were not in-place at the time of the inspection, but were observed by IDNR during their inspection as shown in Figure 3.3.3.2-1 and Photo 3.3.3.2-3..

¶ **Shore Restraints/Access Limits**
None observed.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
None observed.

¶ **Lighting**
Adjacent street/lights provide some illumination. No lighting noted in immediate dam area.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Both banks: Vehicular and pedestrian access very good to abutments, to water very difficult.

¶ **EMS Interview Summary**
Call to Sterling FD Spoke to Fire Chief Arlyn Oetting, 40 years experience in the area.

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

'They do not have a specific plan for incidents at the dam. They respond to 911 calls with 7-9 personnel; they have two boats and have locations close to the two dams: 10 blocks Sinnissippi and 4 blocks to Sterling. Chief estimates arrival within 90 seconds of notification. They can launch above or below either dam. They have an aid agreement with Rock Falls and cooperate in these responses.'

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

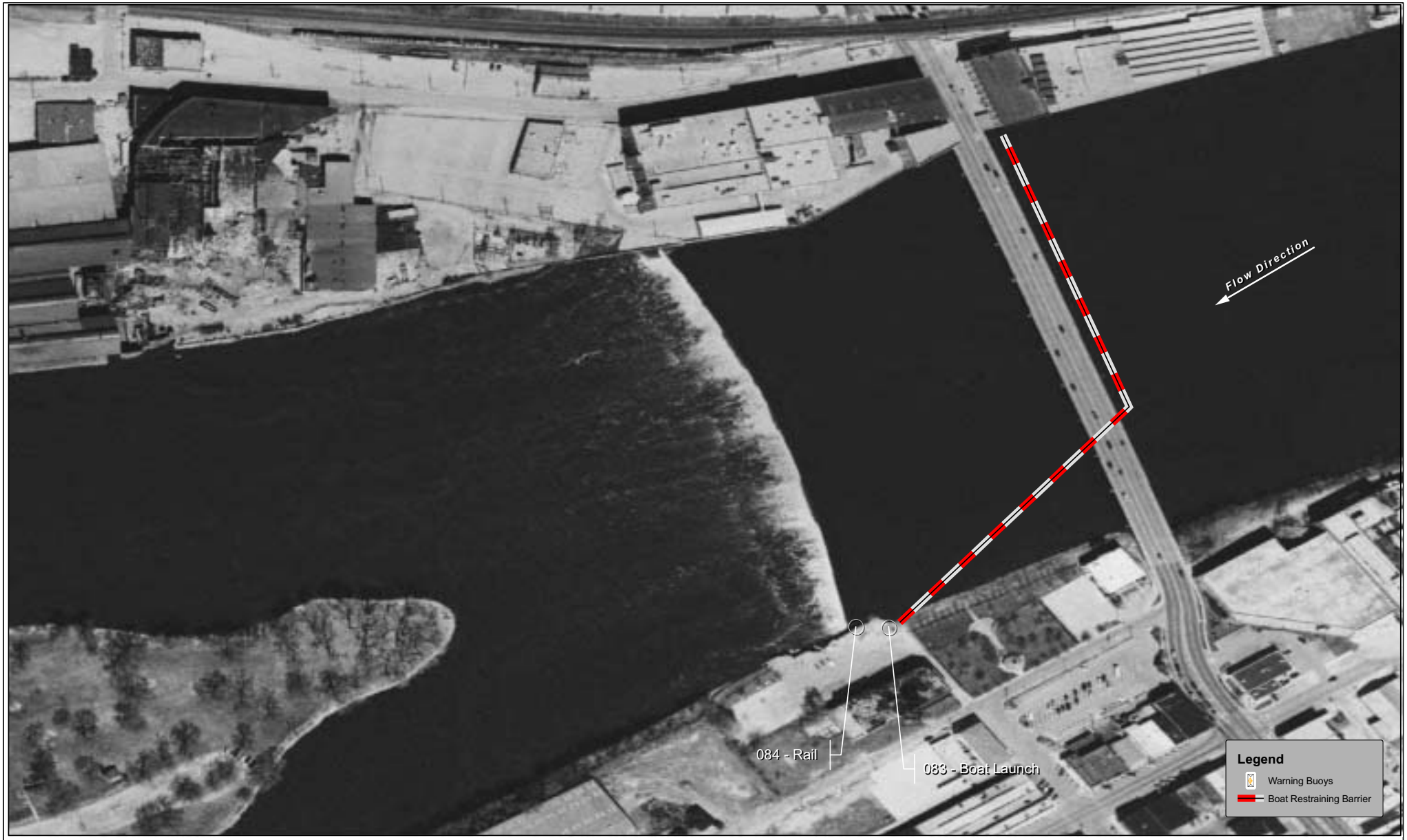
'Did not recall a drowning on the lower dam. Did recall a number of rescues. One boater below Sterling Dam (not in immediate vicinity of dam) was fishing during April high water conditions. Dropped anchor, when anchor caught water velocity sank the boat. Successfully rescued the fisherman. Rescued three young fishermen who had climbed out on adjacent bridge structure. One fatality in early 80's, boy had been fishing, body was recovered below dam, found because of floating minnow bucket. Have rescued boaters and waders in Sinnissippi pool above Sinnissippi Dam caught on sand bar."

3) Are there any public education measures in place to promote dam safety?

'Signage. Also Clinton Iowa has a USCG Auxiliary Power Squadron, voluntary group, that periodically offers river safety seminars. They have advertised these seminars in area newspapers in the past. Their main focus is Mississippi River boaters, as Rock is not navigable.'

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

'Some form of public education. Better enforcement of boating/alcohol regulations. More common sense: "If you don't know, don't go."



0 50 100 200 Feet

1 inch equals 200 feet

Lower Sterling / Lower Rock Falls Dam - Rock River

Rock Falls, Illinois

CTE | AECOM

Figure 5.2.3.2-1
Lower Sterling

Photo 5.2.3.2 - 1 - Lower Sterling Dam, Rock River
Roller extends over 15’ d/s from toe of dam.

Photo 5.2.3.2 - 2 - Lower Sterling Dam, Rock River
Looking d/s at right abutment; note bulkhead riverbank, no access possible from right bank.

Photo 5.2.3.2 - 3 - Lower Sterling Dam, Rock River
Boatline, from Left Bank. (IDNR, 2006)

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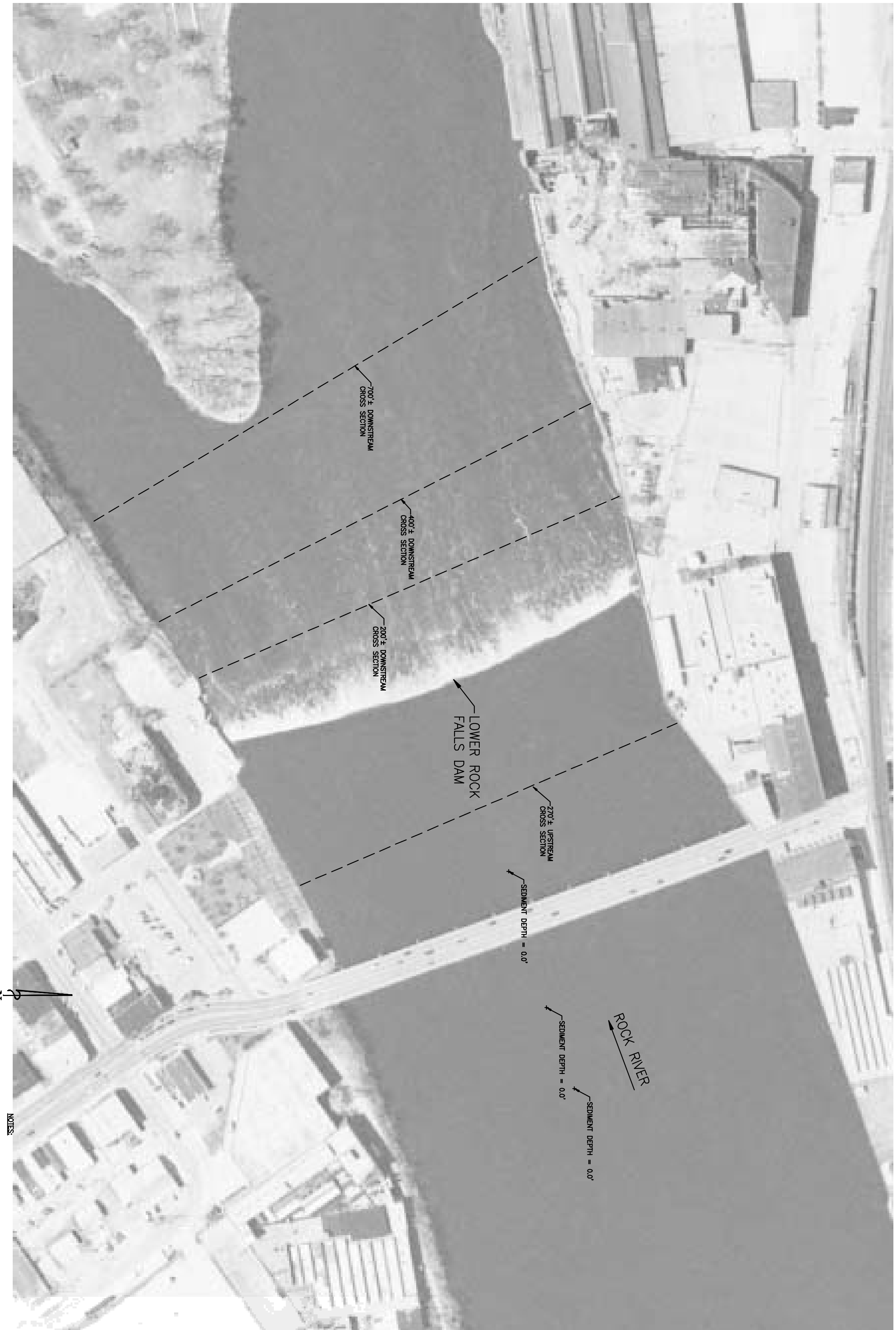

N

0 100' 200'

SCALE: 1 INCH = 100 FEET

NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON NGS/OPUS DIFFERENTIAL GPS SOLUTION.

FIELDWORK OCCURRED ON NOVEMBER 30, 2006.

CONTROL IS SHOWN ON SINNISSIPPI DAM PLAN.

Designed By:	N/A
Drawn By:	NDP
Reviewed By:	ADC
Date:	18 December 2006
Project No.:	232-06058
Drawing:	5
	1 OF 2

Client:

FIGURE 5.2.3.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Sheet Title: LOWER ROCK FALLS - ROCK RIVER
WHITESIDE COUNTY, ILLINOIS
DAM SURVEY - PLAN VIEW

Project: DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

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REVISIONS

No.	Date	Description

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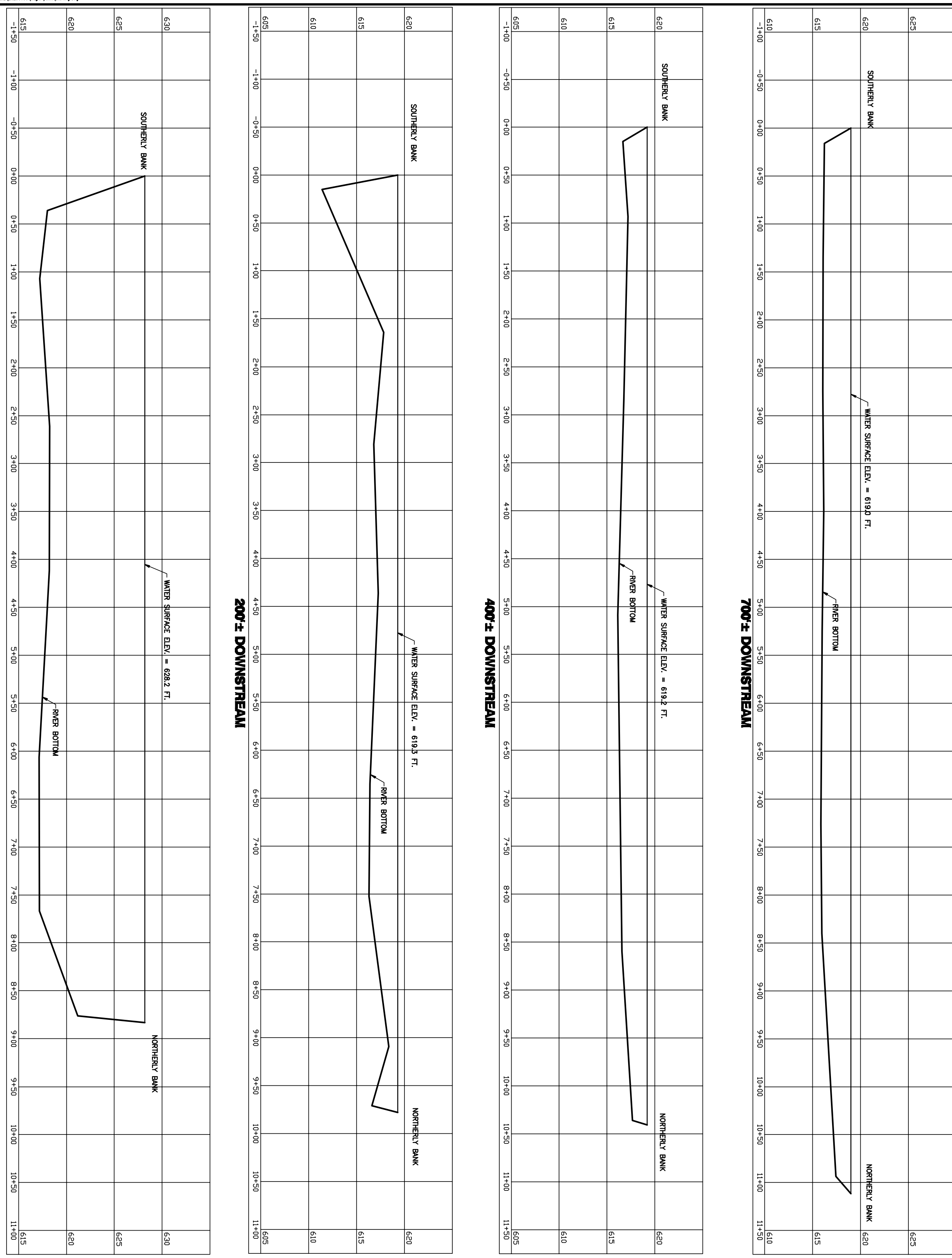

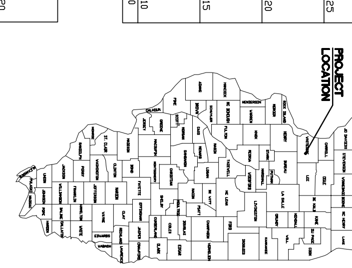

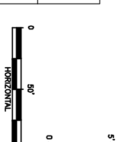

NOTES:

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CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

Designed By:	N/A
Drawn By:	NDP
Reviewed By:	ADC
Date:	18 December 2006
Project No.:	232-06058
Drawing:	5
	2 OF 2

Client:

FIGURE 5.2.3.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Sheet Title: LOWER ROCK FALLS - ROCK RIVER
WHITESIDE COUNTY, ILLINOIS
DAM SURVEY - CROSS SECTIONS

Project: DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

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REVISIONS		
No.	Date	Description

5.2.3.3 Assessment

1) Lack of guard rails on right abutment.
2) Lack of a portage on either side of the river. The only feasible portage would be on the L/B; would require negotiating fairly steep embankment u/s consisting of large riprap. Portage required is long to circumnavigate dam and long abutment structure.
3) Lack of signage concerning the roller hazard.

5.2.4 Sears Dam

5.2.4.1 Existing Documentation

¶ Dam and Location:

Sears Dam	Milan IL	Rock River	Rock Island County

¶ Ownership
The dam is owned by the State of Illinois and leased to White Hydropower. (IDNR 2006)

¶ History
The dam was constructed around 1912 and was last renovated in 1966. Other history of the dam is not available. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

FR 342- Retaining Wall, Sears Dam on Rock River at Rock Island, Department of Water Resources, IDOT, June 1986

5.2.4.2 Visual Reconnaissance

¶ **Dam and Location:**

Sears	Milan	Rock	Rock Island
Dam	IL	River	County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: Daniel J. Hirsch
Company: Kabbes Engineering

¶ **Date & Time:** 1/30/07, 11:00am – 2:30pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete.

¶ **General Dam & River Bank Condition**
Dam is in serviceable condition with some minor structural degradation in evidence. Abutments appear sound with some minor weathering. Upstream and left bank is silt/sand deposit. Upstream right bank is sloping private property with some access and boat docks. Downstream left bank is gravel/sand deposited d/s of bridge pier/abutment. Downstream left bank is 100 year old, operating hydroelectric plant in good condition, downstream bank of gravel and bedrock.

¶ **Evidence of Roller**
10-15' reverse roller (water below surface moves downstream water at surface moves upstream) downstream of toe - Yes; floating automobile tire stayed within five feet of toe of dam for several hours.

¶ **Portages**
Left bank: No portage signage: requires climbing embankment, crossing private property and four lane state highway. Right bank: No portage signage: requires crossing railroad right of way and trackage.

¶ **Boat Restraints**
Yes, privately maintained barrier approximately 125' upstream of dam, May 15 – Oct 15. State maintained warning buoys upstream of barrier. These were not in-place at the time of the inspection, but were observed by IDNR during their inspection as shown in Figure 3.3.4.2-1 and Photo 3.3.4.2-5.

¶ **Shore Restraints/Access Limits**
Fencing around hydroelectric plant, none at right abutment, which can only be accessed with unauthorized makeshift ladder.

¶ **Lifesaving Equipment**

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
FERC required warnings on left and right banks, upstream and downstream of the dam and at forebay and discharge of hydroelectric plant. Signage drawings provided by hydroelectric plant operator. (FERC standard to be included in final draft).

No warning buoys were noted at this visual reconnaissance, however IDNR noted two (2) seasonal buoys upstream of the dam as shown on Figure 3.3.4.2-1 and Photo 3.3.4.2-5.

¶ **Lighting**
None observed.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Upstream left and right bank State highway on embankment, no direct access - requires scaling embankment and guard rail. Downstream left bank gravel access to within 100' of water's edge. Downstream right bank gravel access road to railroad right of way and tracks which must be crossed.

¶ **EMS Interview Summary**
Call to Rock Island County –Water Patrol Unit. Spoke to Officer Watkins, 10+ years experience in this unit.

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   'They do not have a specific plan for incidents at the dam. They have three shift coverage to calls with a department of 7-9 personnel. He identified a number of launch points for their boat depending on whether they needed to be upstream or downstream of the respective dam. He did note that there was no good place to launch for access to D/S reach below Steel Dam. 'But you can walk across the river during low water. He said they could get to Sears Dam within 10 – 15 minutes if they were available when the call came in. Steel Dam would take longer because they'd have to drive through Milan.'

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

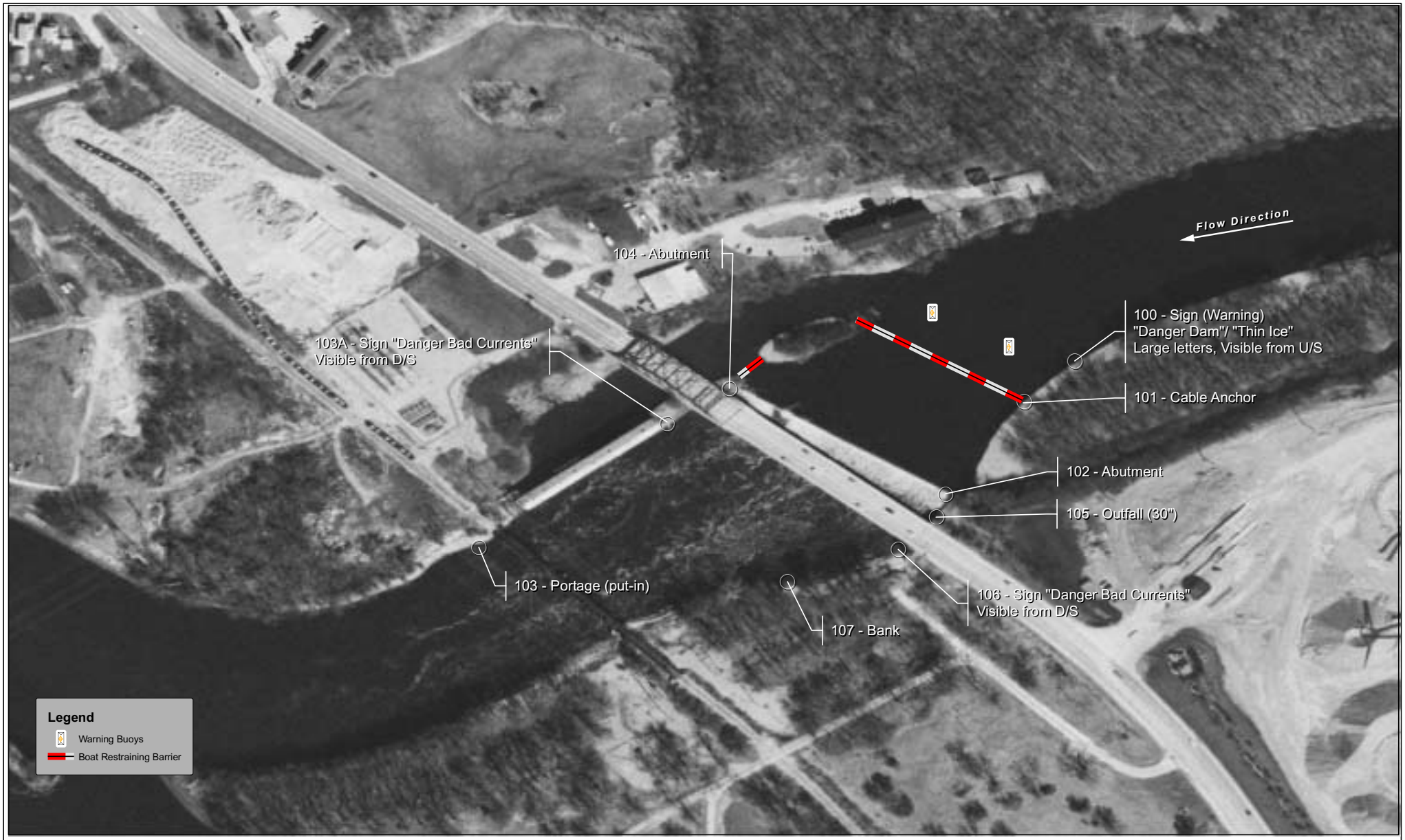
   'Not aware of any drowning near the dams in last 10 years. "

3) Are there any public education measures in place to promote dam safety?

   'Not aware of any."

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   'Boat restraint cables are helpful.'



0 50 100 200 Feet

1 inch equals 200 feet

Sears Dam - Rock River

Milan, Illinois

CTE | AECOM

Figure 5.2.4.2-1

Sears

Photo 5.2.4.2 – 1 – Sears Dam, Rock River

Note: Roller extends 5 -15' d/s from toe of dam. Areas of white indicate damaged dam face areas.

Photo 5.2.4.2 – 2 – Sears Dam, Rock River

Looking u/s along right bank portage must cross tracks, circumnavigate fenced area and wetland.

Photo 5.2.4.2 – 3 – Sears Dam, Rock River
Looking d/s right bank portage

Photo 5.2.4.2 – 4 – Sears Dam, Rock River
Note: evidence of dam face damage; roiled surface is roller.

Photo 5.2.4.2 – 5 – Sears Dam, Rock River
Boatline and Dam Face (IDNR, 2006)

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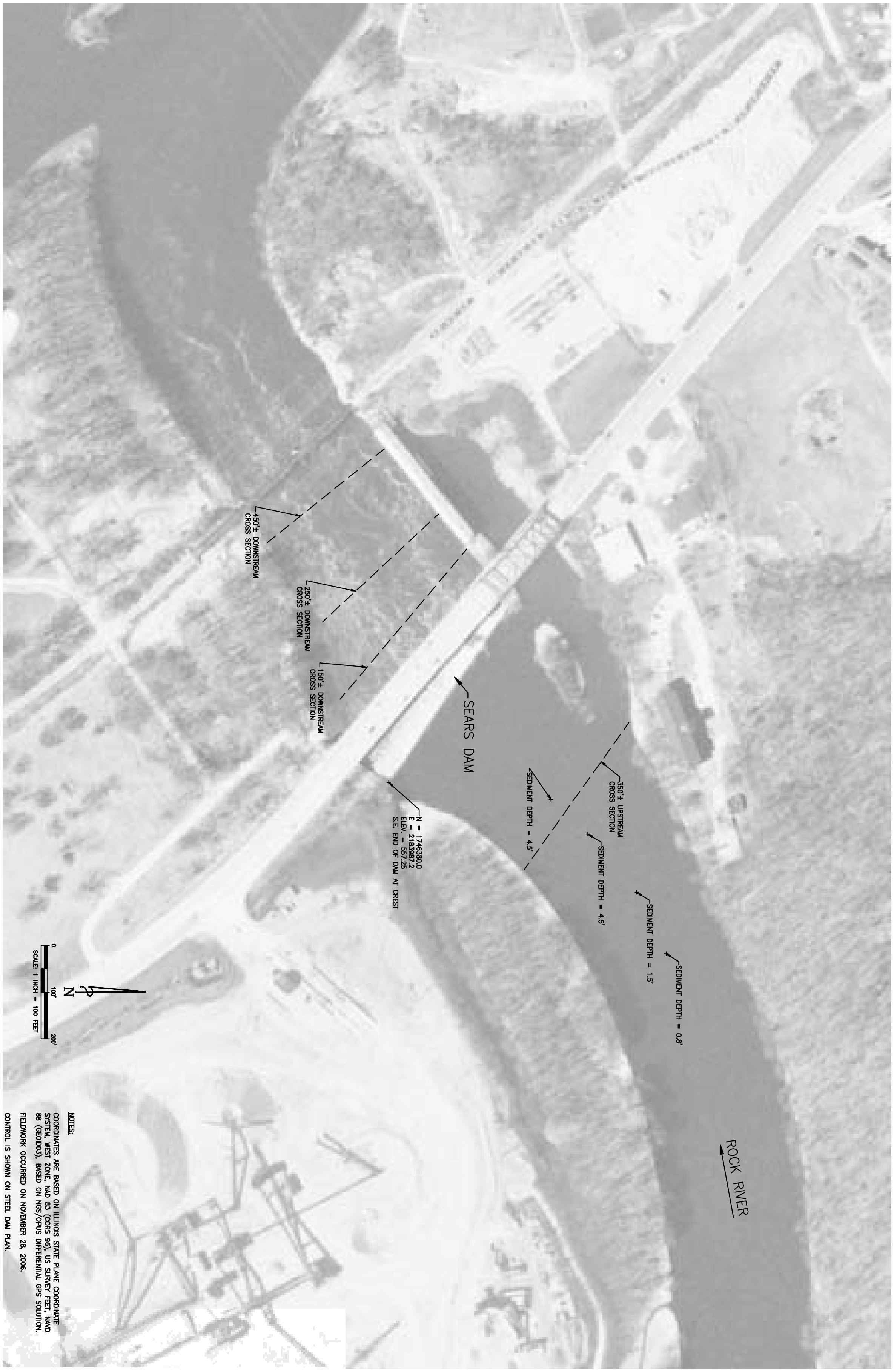

Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 7
1 OF 2

Client:
FIGURE 5.2.4.2-2
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Sheet Title:
SEARS DAM - ROCK RIVER
ROCK ISLAND COUNTY, ILLINOIS
DAM SURVEY - PLAN VIEW

Project:
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

MAURER-STUTZ, INC.
ENGINEERS SURVEYORS
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REVISIONS

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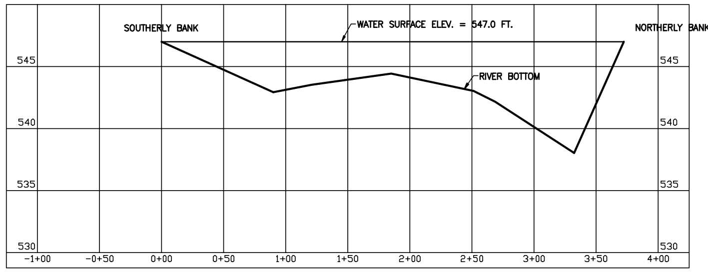

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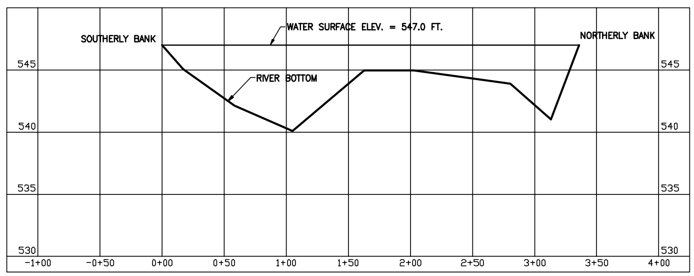
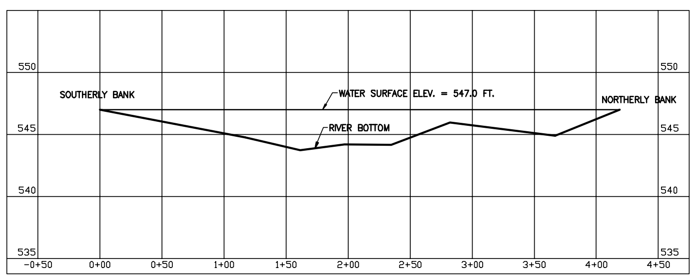
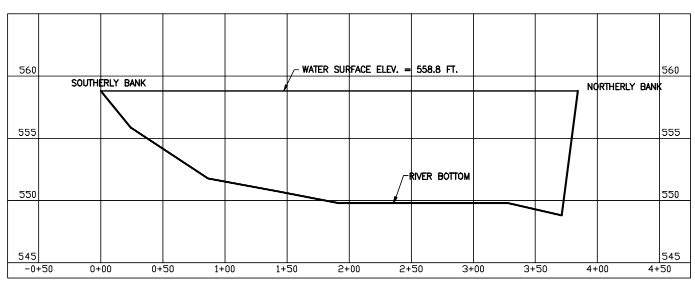


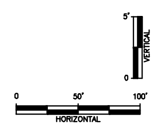
250'± DOWNSTREAM



150'± DOWNSTREAM



350'± UPSTREAM



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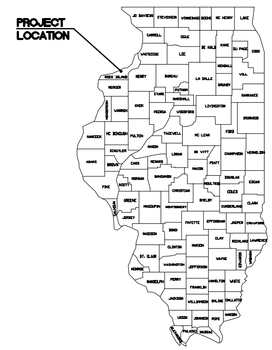

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION.
RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

REVISIONS

No.	Date	Description

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Sheet Title:
SEARS DAM - ROCK RIVER
ROCK ISLAND COUNTY, ILLINOIS
DAM SURVEY - CROSS SECTIONS

Project:
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

Client:
FIGURE 5.2.4.2-3
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 7
2 OF 2

S:\232\23206058\eagle point\rock island.DWG

5.2.4.3 Assessment

1) A 10 – 15' reverse roller is in evidence across the entire toe of the dam.
2) Right abutment access is a makeshift ladder apparently placed by fisherman from sidewalk on IL SH 67 to the power house peninsula. There are no guard rails on either side, the peninsula's retaining walls are vertical and over 10' tall; EMS access could only be from a boat – the highway bridge would interfere with helicopter access.
3) The lack of a signed portage on either side of the river. Any portage must cross either a four lane state highway or an active railroad right of way.

5.2.5 Steel Dam

5.2.5.1 Existing Documentation

¶ **Dam and Location:**

Steel	Milan	Rock	Rock Island
Dam	IL	River	County

¶ **Ownership**
The dam is owned by the Illinois Department of Natural Resources. (IDNR 2006)

¶ **History**
Steel Dam was a rock filled timber crib dam as of about 1900. Steel Dam, along with Sinnissippi Dam, is part of the Illinois and Mississippi Canal. Steel Dam and Sinnissippi Dam were transferred to the State of Illinois by the Federal Government in 1969 becoming part of the Hennepin Canal Parkway State Park. The Illinois Department of Conservation had ownership of the dams but they were maintained by the Department of Transportation's Division of Water Resources per State statute and interagency agreement. The dam is now owned by the Illinois Department of Natural Resources. The Sears-Steel Dams pool allowed passage of canal boats on the Rock River between the Rock and Green Rivers. The pool is now used only for recreational boating on the Rock River. Reconstruction of Steel Dam was completed in 1989 at a cost of $1,771,200 under FR-320. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

FR 320 - Steel Dam on Rock River, Department of Water Resources, IDOT, June 1987

5.2.5.2 Visual Reconnaissance

¶ **Dam and Location:**

Steel	Milan	Rock	Rock Island
Dam	IL	River	County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: Daniel J. Hirsch
Company: Kabbes Engineering

¶ **Date & Time:** 1/30/07, 12:00pm – 4:30pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete.

¶ **General Dam & River Bank Condition**
Dam was recently rebuilt, appears to be in good condition with horizontal and vertical alignment of dam crest and abutments good. Abutments appear sound and in good condition Upstream left bank is silt/sand deposit in state park. Downstream left bank is gravel/sand deposits accessible through park. Right bank is on Van Druff Island, can only be accessed from river or over private property. Upstream bank is gravel and bedrock.

¶ **Evidence of Roller**
5-15' reverse roller (water below surface flows downstream flow at surface flows upstream) downstream of toe - Yes; three large tree trunks were trapped and rotating at the toe of the dam for several hours.

¶ **Portages**
No portage signage: direct route, no onshore signage. Right bank: No portage signage: requires private property, and traversing 10-12' tall embankment to water.

¶ **Boat Restraints**
Privately maintained barrier approximately 450' upstream of dam, May 15 – Oct 15. These were not in-place at the time of the inspection, but were observed by IDNR during their inspection. See Figure 3.3.5.2-1 and Photo 3.3.5.2-2.

¶ **Shore Restraints/Access Limits**
Left bank 37" tall guard rail on abutment; right bank 42" railing on abutment.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
FERC suggested warnings on left and right banks: upstream facing 4' X 8' signs with 20" tall lettering "Danger Dam" and smaller diamond shaped "Thin Ice" warning signs. On both downstream abutments, smaller "Danger Bad Currents, Keep Back signs. (FERC standards will be included in future drafts).

No warning buoys were noted at this visual reconnaissance, however IDNR noted six (6) seasonal buoys upstream of the dam as shown on Figure 3.3.5.2-1.

¶ **Lighting**
None observed.

¶ **Access (pedestrian, vehicular, emergency equipment)**
On left bank, upstream: open field walk to parking lot and downstream
open access across state park land, climb 10-12' embankment.

On right bank, upstream: must traverse 1.8 mi gravel road across gated, private quarry property to reach shoreline. No public access. On downstream side shoreline is steep (>1:1 slope) embankment over 12' high; upstream shoreline slope is more gradual, half as high.

¶ **EMS Interview Summary**
Call to Rock Island County –Water Patrol Unit. Spoke to Officer Watkins, 10+ years experience in this unit.

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   'They do not have a specific plan for incidents at the dam. They have three shift coverage to calls with a department of 7-9 personnel. He identified a number of launch points for their boat depending on whether they needed to be upstream or downstream of the respective dam. He did note that there was no good place to launch for access to D/S reach below Steel Dam. 'But you can walk across the river during low water. He said they could get to Sears Dam within 10 – 15 minutes if they were available when the call came in. Steel Dam would take longer because they'd have to drive through Milan.'

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

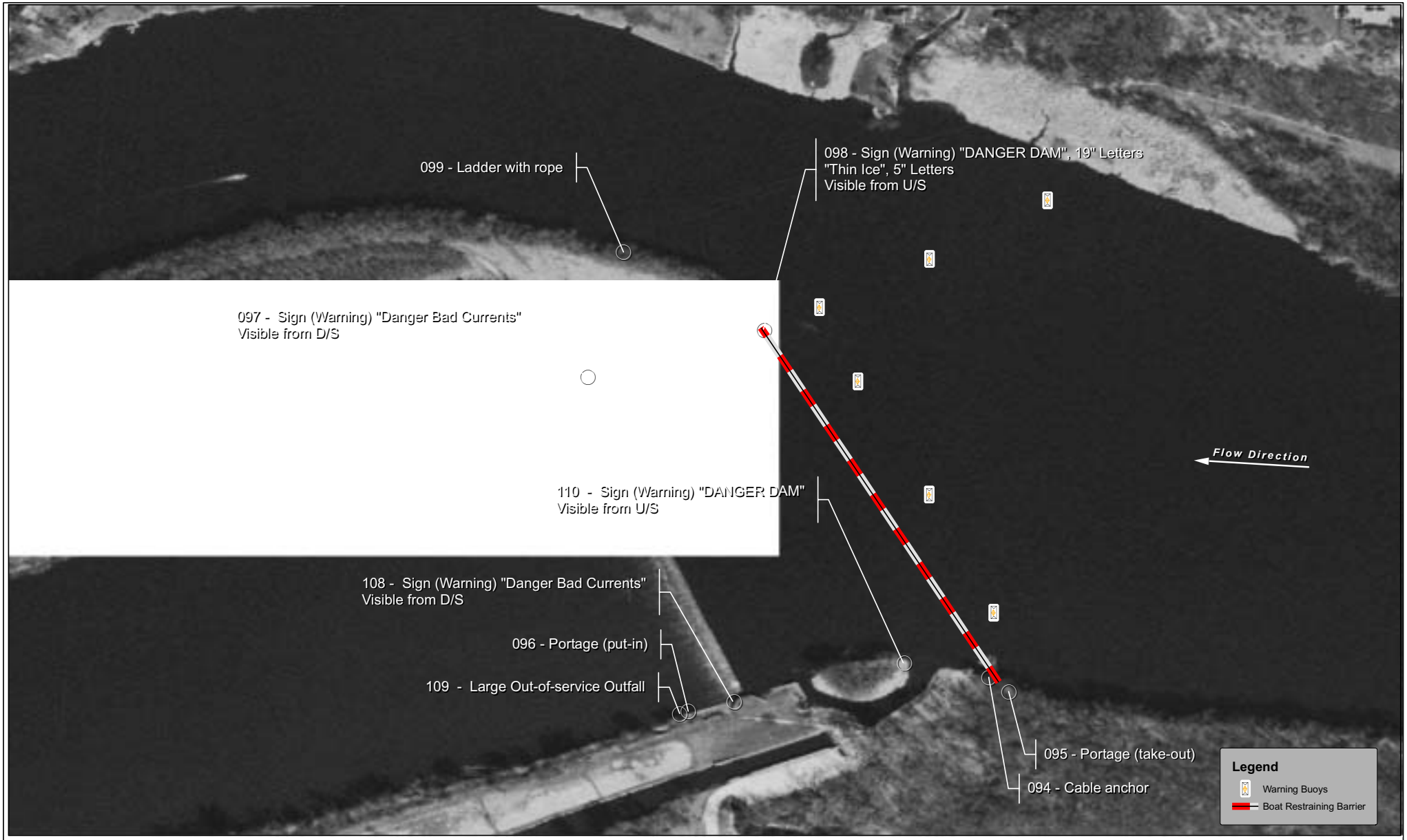
   'Not aware of any drownings near the dams in last 10 years. "

3) Are there any public education measures in place to promote dam safety?

   'Not aware of any."

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

'Boat restraint cables are helpful.'



0 50 100 200 Feet

1 inch equals 200 feet

Steel Dam - Rock River

Milan, Illinois

CTE | AECOM

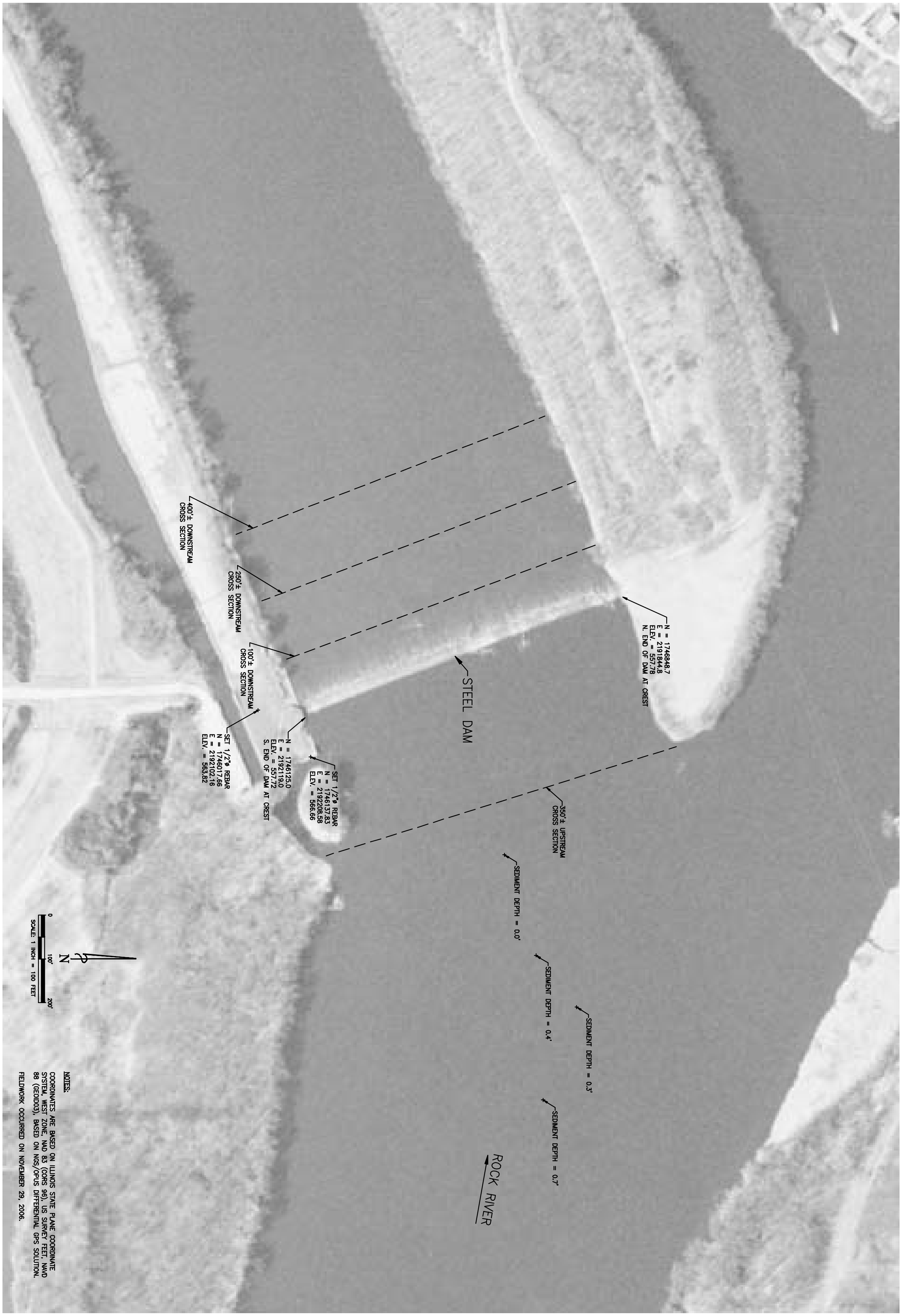
Figure 5.2.5.2-1

Steel

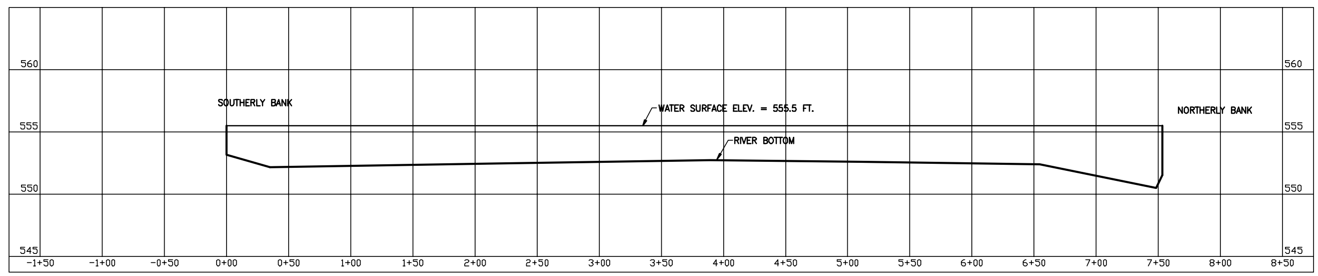
Photo 5.2.5.2 - 1 - Steel Dam, Rock River
Roller extends 5 -15' downstream from toe of dam. Note large tree trunks pinned to toe of dam, rotate occasionally.

Photo 5.2.5.2 - 2 - Steel Dam, Rock River
Boatline. (IDNR, 2006)

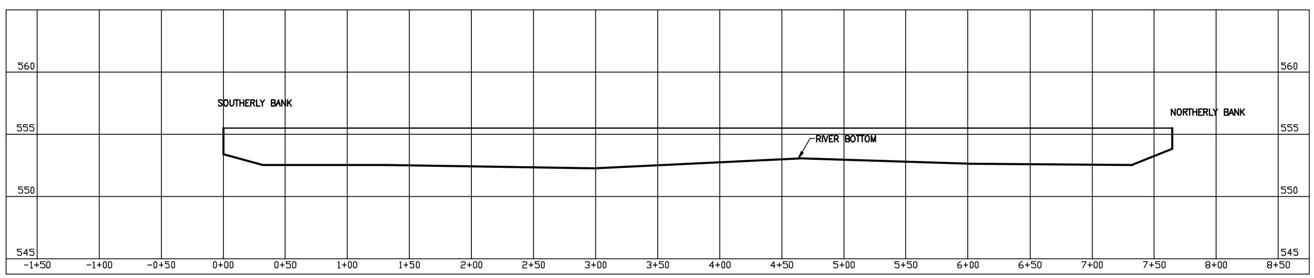
Photo 5.2.5.2 - 3 - Steel Dam, Rock River
Fisherman near roller. (IDNR, 2006)



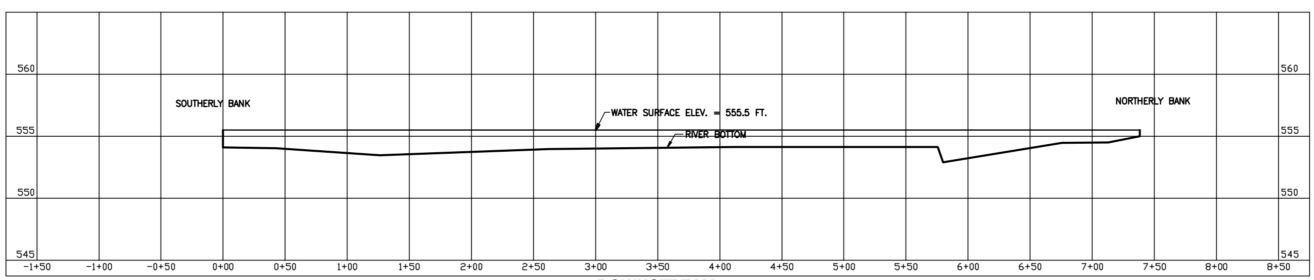
Designed By: N/A	Client:	Sheet Title: STEEL DAM - ROCK RIVER ROCK ISLAND COUNTY, ILLINOIS DAM SURVEY - PLAN VIEW	MAURER & STUTZ, INC. ENGINEERS SURVEYORS "WORKING with YOU by DESIGN"	REVISIONS
Drawn By: NDP	FIGURE 5.2.5.2-2		7615 NORTH HARKER DRIVE PEORIA, ILLINOIS 61615 PH. (309) 693-7615 FAX (309) 693-7616	No. / Date / Description
Reviewed By: ADC	CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.	Project: DAM SAFETY EVALUATIONS STATEWIDE PROGRAM	1670 EAST ASH STREET CANTON, ILLINOIS 61520 PH. (309) 647-7831 FAX (309) 647-6155	
Date: 18 December 2006			ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177	
Project No.: 232-06058				
Drawing: 6 — 1 OF 2				



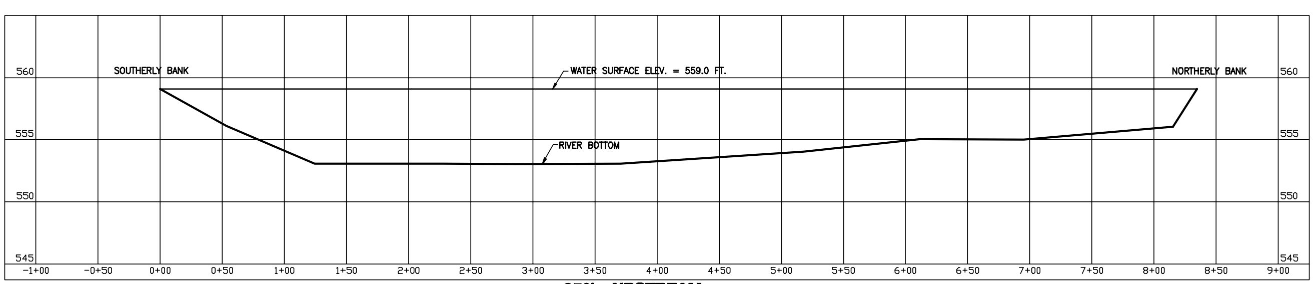
400'± DOWNSTREAM



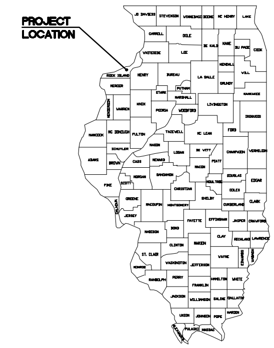
250'± DOWNSTREAM

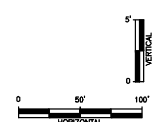


100'± DOWNSTREAM



350'± UPSTREAM





SCALES

NOTES:

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CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

REVISIONS

No.	Date	Description

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Sheet Title:
STEEL DAM - ROCK RIVER
ROCK ISLAND COUNTY, ILLINOIS
DAM SURVEY - CROSS SECTIONS

Project:
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

Client:
FIGURE 5.2.5.2-3
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Designed By: **N/A**
Drawn By: **NDP**
Reviewed By: **ADC**
Date: **18 December 2006**
Project No.: **232-06058**
Drawing: 6

2 OF 2

5.2.5.3 Assessment

1) Significant roller in evidence.
2) Dam is new and in good condition.
3) Lack of defined portage and canoe launch/retrieve area.
4) The proximity of the dam to Hennepin Canal state park; site shows evidence of frequent recreational uses, mainly fishing even in the colder seasons.

5.3 Fox River Dams

5.3.1 McHenry (Stratton L & D) Dam

5.3.1.1 Existing Documentation

¶ Dam and Location:

William G. Stratton/ McHenry	McHenry	Fox	McHenry
Dam	IL	River	County

¶ Ownership
The dam is owned by the State of Illinois. (IDNR 2006)

¶ History
Early in the 1900's a group of property owners and others organized the Fox River Navigable Waterway Association. In 1907 this association secured a Federal Permit and constructed a wood dam across the Fox River. This dam rotted out and prior to 1915 was replaced with a three foot steel sheet piling structure equipped with three foot high flashboards. This dam was constructed with a lock at the east end, on the opposite side of the present lock. In 1923-24 the titles, rights and interest in the dam, lock and adjacent properties were conveyed to the State of Illinois. The State continues to operate and maintain the dam. Major damage occurred to the structure from the flood of July 1938. In 1939 the State Div. of Waterways under contract FR-14 constructed the present dam and gate control structure. The present boat lock was constructed later in 1958-60 under State Div. of Waterways contracts FR-109 and FR-113. The lock was opened to the public use on June 1, 1960. A number of other contracts have been awarded and completed since 1939 to the dam, buildings and area. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

FR 14 - McHenry Dam, River Control Improvements, Department of Public Works and Buildings, Division of Waterways, April 1939.

Stone Facing, McHenry Dam, Department of Public Works and Buildings and Department of The Interior National Park Service Cooperation, September 1940.

FR 109 - McHenry Lock, Department of Public Works and Buildings, Division of Waterways, 1958.

FR 113 - McHenry Lock, Stage II Construction, Department of Public Works and Buildings, Division of Waterways, 1959.

FR 254 - Fox River McHenry Rehabilitation of Control Gates, Department of Waterways, IDOT, March 1974.

FR 282 - McHenry lock, Riprap bank Protection, Department of Water Resources, IDOT, January 1977.

FR 301 - Fox River McHenry, Walkway at Control Gates, Department of Water Resources, IDOT, 1978.

Stratton Lock and Dam life Extension Reconnaissance Study, Office of Water Resources, IDNR, June 2005.

OWR Survey at William G Stratton Lock and Dam near McHenry, IL. 2006.

5.3.1.2 Visual Reconnaissance

¶ **Dam and Location:**

William G. Stratton/ McHenry	McHenry	Fox	McHenry
Dam	IL	River	County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: John Hood
Company: Kabbes Engineering

¶ **Date & Time:** 2/1/07, 2:00pm to 5:30pm

¶ **Approximate Flow:**

¶ **Standard Photo Set/Video:**

¶ **General Dam & River Bank Condition**
Dam appears in good condition with no visible obvious deficiencies. New gate installed in left spillway in last 10 years.

¶ **Evidence of Roller**
No, however water was 18" – 2' lower than normal flow because of winter draw down. There was a hydraulic jump visible at the downstream side of the west spillway or right spillway.

¶ **Portages**
No portage marked, though canoeists can exit river at state park on left bank and portage around dam. Potential portage path currently marked as snowmobile trail.

¶ **Boat Restraints**
IDNR staff indicates restraints are placed upstream of the spillway. These were not in-place at the time of the inspection, but were observed by IDNR during their inspection as shown in Figure 3.4.1.2-1.

¶ **Shore Restraints/Access Limits**
No restraints on left bank except low wall at left bank dam embankment. Two center islands are only accessible by boat in the buoy marked "no boating" area. Lock area and walkway access to center island from right bank are well protected by fencing and locked gates.

¶ **Lifesaving Equipment**
Yes, life rings are upstream and downstream of dam around right and center spillway and lock. Not available on left bank because of vandalism.

¶ **Emergency Call Box**
Inside lock house.

¶ **Warning/Information Signage**
Yes, standard OWR warning sign ("Warning Hazardous Currents Present DO NOT Enter Spillway Area" posted in Spanish and English) on downstream side of dam visible from 15 yards. Also signs upstream of dam.

No warning buoys were noted at this visual reconnaissance, however IDNR noted seven (7) seasonal buoys upstream of the dam and spillway as shown on Figure 3.4.1.2-1 and Photo 3.4.1.2-8.

¶ **Lighting**
Yes.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Yes on both banks through state park, lock house and walkways to islands from lock house on right bank.

¶ **EMS Interview Summary**
Interview with IDNR Lock Operator talked to John Palmieri

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   Lock operator will offer assistance with available safety equipment; McHenry County Sheriff Department operates from the site, they provide additional assistance, beyond that 911 call is made to local authorities. Response time is under a minute from notice. McHenry Township FPD is 911 responder.

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   None. Per lock operator

3) Are there any public education measures in place to promote dam safety?

   None. Signage, USCG Power Squadron does provide Safe Boating Classes for boaters on the river.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   Education is always important.

Interview with McHenry Township Fire Protection District Talked to Mike Majercik, Assistant Chief Fire Prevention

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   'McHenry Township FPD is 911 responder. They do not have a formal plan. They normally send an engine company equipped with two survival suits and lines to enter the water. They have a boat and divers to follow, if necessary. They can be on site within 5-10 minutes of a call.'

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

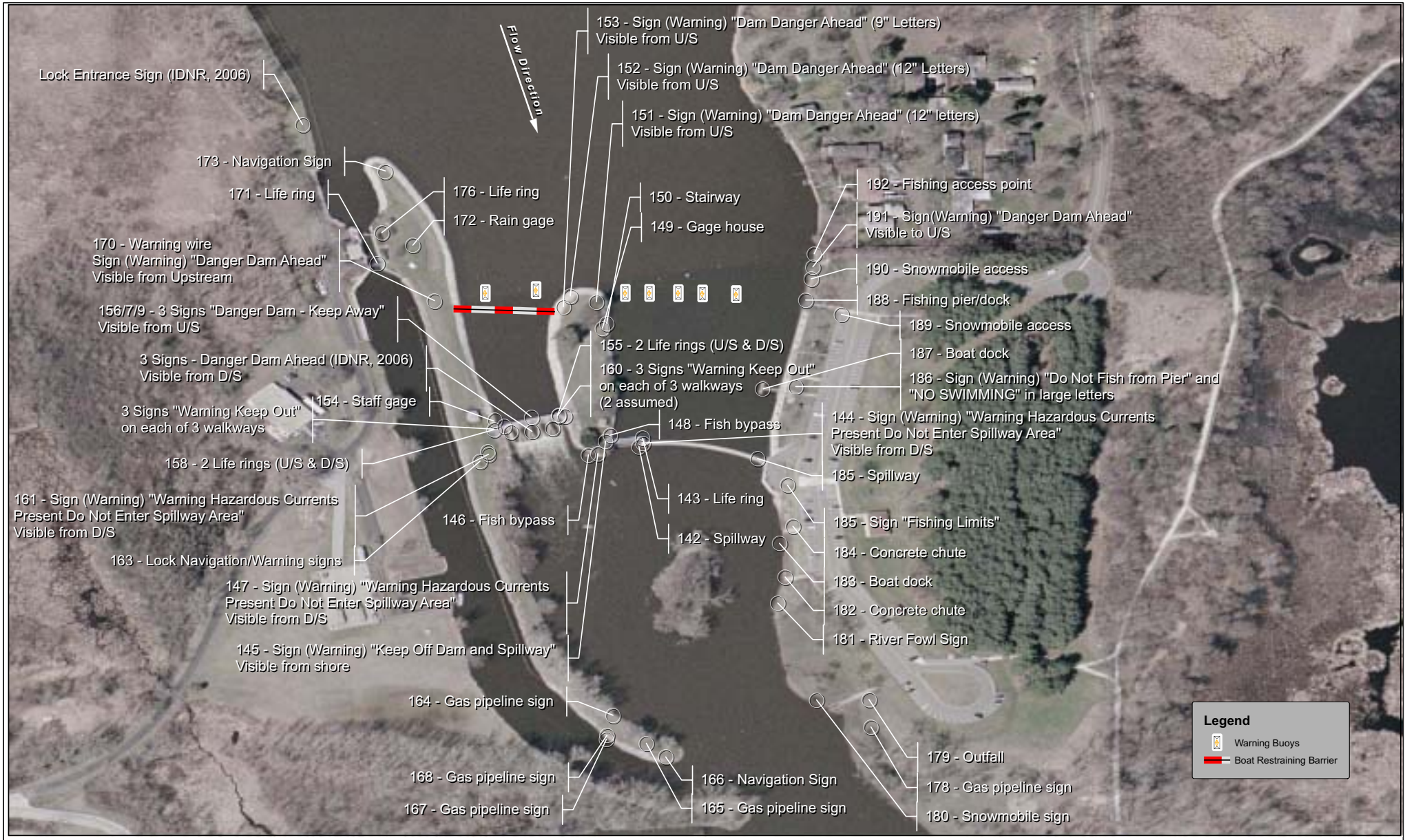
   In the last two years, there have been no fatalities.

3) Are there any public education measures in place to promote dam safety?

   None.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   Public education would help. Common sense. Responder also asked for more information about dangers associated with dams. Promised to review and disseminate throughout department if received.



0 50 100 200 Feet

1 inch equals 200 feet

Mc Henry (Stratton L and D) Dam - Fox River

Mc Henry, Illinois

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Figure 5.3.1.2-1

McHenry

Photo 5.3.1.2 - 1 - McHenry (Stratton L & D) Dam, Fox River
Potential portage route.

Photo 5.3.1.2 - 2 - McHenry (Stratton L & D) Dam, Fox River
Roller from right bank.

Photo 5.3.1.2 - 3 - McHenry (Stratton L & D) Dam, Fox River
Bi-lingual signage

Photo 5.3.1.2 - 4 - McHenry (Stratton L & D) Dam, Fox River
Seasonal Warning Buoys, Boatline and Warning Sign. Upstream of Spillway. (IDNR, 2006)

Photo 5.3.1.2 - 5 - McHenry (Stratton L & D) Dam, Fox River
Seasonal Warning Buoys, Upstream of Dam. (IDNR, 2006)

Photo 5.3.1.2 - 6 - McHenry (Stratton L & D) Dam, Fox River
Warning Signage at Spillway (IDNR, 2006)

Photo 5.3.1.2 - 7 - McHenry (Stratton L & D) Dam, Fox River
Dam Face, from Downstream. (IDNR, 2006)

Photo 5.3.1.2 - 8 - McHenry (Stratton L & D) Dam, Fox River
Seasonal Warning Buoys and Warning Signage, Upstream of Dam. (IDNR, 2006)

Photo 5.3.1.2 - 9 - McHenry (Stratton L & D) Dam, Fox River
Dam Face, from Right bank. (IDNR, 2006)

5.3.1.3 Assessment

1) Public boating access from concession within the “no boats” buoys upstream and downstream of left bank spillway.
2) Balancing fishing access for the many fishermen that fish from the bank on the left bank with the need for more guard rails to protect individuals from access to waterway.
3) Fishermen desire to access left center island for fishing at crowded park.
4) No visible portage signage and location for canoeists that may want to portage dam but not go through lock.

5.3.2 Algonquin Dam

5.3.2.1 Existing Documentation

¶ **Dam and Location:**

Algonquin Dam	Algonquin IL	Fox River	McHenry County

¶ **Ownership**
This dam is owned by the State of Illinois. (IDNR 2006)

¶ **History**
William Sloan was given authority to build a mill dam by an act of legislation approved February 1853. A dam was built on or about 1854. In 1915, a dam existed with a mill and a tail race on the east side of the river. The State of Illinois acquired title by quit claim to the mill lot on May 12, 1939 from the Public Service Co. of Northern Illinois. In 1946-47, the State Division of Waterways under contract with PW-8 built the Algonquin Dam a short distance south of the old dam and also removed the old dam. (IDNR 2006)

An additional spillway structure was added to this dam. It has a variable height dam and gates that maybe opened or closed.

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

OWR Survey at Algonquin Dam, Algonquin, IL. 2006.

5.3.2.2 Visual Reconnaissance

¶ **Dam and Location:**

Algonquin Dam	Algonquin IL	Fox River	McHenry County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 12/27/2006 9:30 am to 2:00 pm

¶ **Approximate Flow:** 2,750 cfs (gage height: 1.98 ft)

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
No visible obvious deficiencies were noted. The horizontal and vertical alignment of the dam crest and abutments was good. Abutments are in good condition, with 4 ft. rails. Left downstream abutment is eroded with some large rocks and steep banks.

¶ **Evidence of Roller**
Yes, reverse roller (water below the surface moves downstream water at the surface moves upstream) extends for 10-12 feet beyond the dam. Sticks and other objects were seen readily stuck in the roller. There is a roller on the dam and on the new spillway (river right). The roller on the spillway appears to extend several feet further than the dam roller.

¶ **Portages**
Portage entry and exit on right banks, 1200 feet upstream and 500 feet downstream. Portage in good condition. No portage signage observed. Downstream entry portage leads directly into strong current. Consider redesign.

¶ **Boat Restraints**
Yes, just upstream of bridge, composed of buoys strung through wire across the bridge.

¶ **Shore Restraints/Access Limits**
Locked, 7-foot high wrought iron fence on river left side prevents access to face. However, there is pedestrian access at upstream of wrought iron fence and at downstream from new park and from Crystal Creek mouth. No access limitations are present at the new park. There was a swift current observed in the downstream reach. The left bank has a 4 foot high rail along the abutment that limits access from the east. This area is prohibited to the public with multiple “No Trespassing” signs.

¶ **Lifesaving Equipment**
For IDNR use, in locked wrought iron fence adjacent to spillway.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
Three (3) standard OWR warning signs ("Warning Hazardous Currents DO NOT Enter Spillway Area", posted in English and Spanish. Visible from 45 feet.) on downstream face of dam (1 on each end and on the wall between the gated spillway and the dam). "Do not enter" signs on left side about the wooded area. Two (2) "No Trespassing" signs around gate house. No portage signage.

IDNR noted five (5) seasonal buoys and a floating "Danger Dam" sign upstream of the dam as shown on Figure 3.4.2.2.-1 and Photo 3.4.2.2-7.

¶ **Lighting**
Lamps at park. Lamps on bridge. No apparent lights at abutments.

¶ **Access (pedestrian, vehicular, emergency equipment)**
There is no direct access by emergency equipment to the dam face at either abutment. Rescue boats might enter the river at the boat launch at the nearby park (right bank downstream of the dam).

¶ **EMS Interview Summary**
Fire department provided a copy of their emergency plan. Initially three boats are sent to the scene and 1 squad. If needed a diver and support will be called immediately upon arrival at the scene.

According to the Fire Chief, a jet skier severely injured last year when he hit the boat restraint at high speed. Man evading police jumped into Fox River and died in Roller.

Fire Chief concerned about potential attraction of park to bring more people near the dam. Thoughts/suggestions included: 1) Educational signage. 2) Additional education programs for the public, possibly including in school visits. 3) Placing flags on the upstream boat restraint/wire.

Interviewed Fire Chief Steve Guetschow of Algonquin Fire Department. He has 28 years of experience with the department. He can be reached at 847-658-8233.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   Fire department provided a copy of their emergency plan. Initially three boats are sent to the scene and 1 squad. If needed, a diver and support will be called immediately upon arrival at the scene. The MARAS system (Mutual Aid Response System) summons nearby departments to the scene automatically. Fire fighters will not enter the boil.

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

According to the Fire Chief, a jet skier severely injured last year when he hit the boat restraint at high speed. Man evading police jumped into Fox River and died in Roller. Other boat accidents have occurred.

3) Are there any public education measures in place to promote dam safety?

None

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

Fire chief concerned about potential attraction of park to bring more people near the dam. Thoughts/suggestions included: 1) Educational signage. 2) Additional education programs for the public, possibly including in school visits. 3) Placing flags on the upstream boat restraint/wire.

Note: Most boats get in the water and head north and avoid the dam altogether,

0 50 100 200
Feet
1 inch equals 200 feet

Algonquin Dam - Fox River

Algonquin, Illinois

CTE | AECOM

Figure 5.3.2.2-1
Algonquin

Photo 5.3.2.2- 1 - Algonquin Dam, Fox River
Dam and roller, from left bank.

Photo 5.3.2.2- 2 - Algonquin Dam, Fox River
Spillway operated by IDNR. Note life preservers.

Photo 5.3.2.2- 3 - Algonquin Dam, Fox River
Spillway roller. Note warning sign and Crystal Creek mouth.

Photo 5.3.2.2- 4 - Algonquin Dam, Fox River
View of left embankment. Area has multiple “No trespassing” signs.

Photo 5.3.2.2- 5 - Algonquin Dam, Fox River
Fire Department boat launch, upstream right.

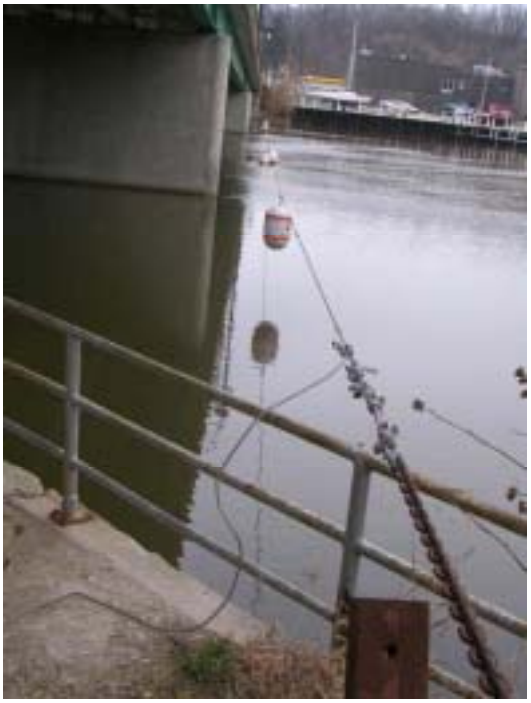

Photo 5.3.2.2- 6 - Algonquin Dam, Fox River
Boat line, from left bank.

Photo 5.3.2.2- 7 - Algonquin Dam, Fox River
Seasonal Warning Buoys and Danger Dam Ahead Sign. (IDNR, 2006)

5.3.2.3 Assessment

1) There is unimpeded access to the high current downstream of dam roller from the newly created park. The Algonquin Dam is adjacent to a newly created recreational park, on the right bank near the mouth of Crystal Creek. This park will potentially attract large numbers of people during warmer months. No rails or walls are present to prevent access to the stream.
2) This portion of the Fox River has a high level of recreational boating, as observed by the many boat piers upstream of the dam.
3) Both the dam and spillway have a visible roller, however the spillway, when in operation, has a significantly more turbulent roller. A swift current was also observed downstream of the dam and especially downstream of the spillway, near the park on the right bank.
4) A boat restraint with five (5) buoys is present upstream of the dam and is in place year round. However, the restraint is quite high above the water at either of the shores and may not be reachable from a canoe, kayak or by a swimmer at the shore. The Algonquin Fire Chief stated that one near fatality occurred recently when a jet skier hit this restraint at a high speed.
5) This dam has standard OWR warning signs at both abutments, but there are no warning signs to the general public. A life buoy was found inside the locked IDNR gate; however no life-saving equipment is readily available to the public.
6) Portages are found on the left bank, upstream and downstream, however, no signage was observed.
7) Vehicular access from upstream bridge excellent access to downstream banks good to moderate.

5.3.3 Carpentersville Dam

5.3.3.1 Existing Documentation

¶ Dam and Location:

Carpentersville Dam	Carpentersville IL	Fox River	Kane County

¶ Ownership
This dam is privately owned (IDNR 2006)

¶ History
At Carpentersville, a sawmill was built by Thomas L. Shields in 1837-1838. In 1916, a wood crib dam with concrete face existed along with head races on each side of the river. (IDNR 2006). One or more deaths had been reported at this site.

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

5.3.3.2 Visual Reconnaissance

¶ **Dam and Location:**

Carpentersville Dam	Carpentersville IL	Fox River	Kane County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/05/2007 10:00 am to 12:00 pm

¶ **Approximate Flow:** Unknown

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
Right abutment has some undercutting at the downstream foot of the abutment. Log debris on the dam face near the right abutment was noted. Left abutment is in deteriorating condition with cracks and some vegetation growth in abutment. There is erosion around the left abutment. The fish ladder located at the left abutment showed some concrete deterioration and was partially clogged with log debris. Significant erosion on downstream left bank. There is a millrace left of the left dam abutment that has been bullheaded to prevent flow. Some overflow could occur at exceptionally high river levels. There is a pedestrian walkway over the millrace that is in poor condition. This walkway is the access to the left abutment.

¶ **Evidence of Roller**
Indeterminate. The dam has a sloped face. A standard hydraulic jump exists at the downstream toe of the dam between 5 and 10 feet. White water extends for 20 to 30 feet.

¶ **Portages**
Unmarked portages upstream at left and right abutments. Downstream right bank has a portage near the dam face. There is no apparent downstream of the left abutment, due to very steep slopes and heavy brush.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints/Access Limits**
The right abutment has a 4'3" high wrought iron fence. There is access directly to the hydraulic jump just below the right abutment, at the portage. There is no fencing or other shore restraint on the left abutment.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
No warning signage was observed.

¶ **Lighting**
No lighting was present at either abutment or for the dam face.

¶ **Access (pedestrian, vehicular, emergency equipment)**
No direct vehicular access. Right abutment has a parking lot, but abutment access limited to pedestrians. The portage at the right downstream face is accessible by vehicle. Left abutment is only accessible by foot with difficulty.

¶ **EMS Interview Summary**
Fire chief has been at Carpentersville Fire department for 30 years. Fire department can likely respond within 10 to 15 minutes. Boats might be launched just below the dam. Fire Department does not allow its boats into the roller. Elgin fire department has a rescue boat with a special deck which can abut the dam. Fire chief believed life rings might easily be stolen. An emergency call box at the dam might be useful. Fire chief stated that 4 buoys are in place at the dam between March and October, with one buoy further upstream.

Interviewed Fire Chief of Carpentersville Fire Department. He has 30 years of experience with the department.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

Boats might be launched just below the dam or from the forest preserve launch upstream. Fire Department does not allow its boats into the roller. Elgin fire department has a rescue boat with a special deck which can abut the dam.

Fire department can likely respond within 10 to 15 minutes.

1) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

According to Fire chief, 2-3 drownings occurred approximately 15 years back that are related to dam. These involved two boys going over the dam in a kayak and a man coming too close to the roller.

Otherwise, the river is dangerous, in general since there are many holes that people might step into and drown. Fire Chief believed it was possible to save some one from the boil.

2) Are there any public education measures in place to promote dam safety?

Fire chief stated that 4 buoys are in place at the dam between March and October, with one buoy further upstream.

3) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

State could perform a blitz on water safety as a whole. Believed life rings would likely be stolen. Maybe placement under glass could help. An emergency call box at the dam might be useful.

Carpentersville Dam - Fox River

Carpentersville, Illinois

CTE | AECOM

Figure 5.3.3.2-1
Carpentersville

Photo 5.3.3.2 - 1 - Carpentersville Dam, Fox River
Gazebo/right abutment. Pedestrian access only.

Photo 5.3.3.2 - 2 - Carpentersville Dam, Fox River
Boat launch, portage. Right bank near face.

Photo 5.3.3.2 - 3 - Carpentersville Dam, Fox River
View of dam face from right abutment.

Photo 5.3.3.2 - 4 - Carpentersville Dam, Fox River
Deteriorating Millrace walkway. Left Bank.

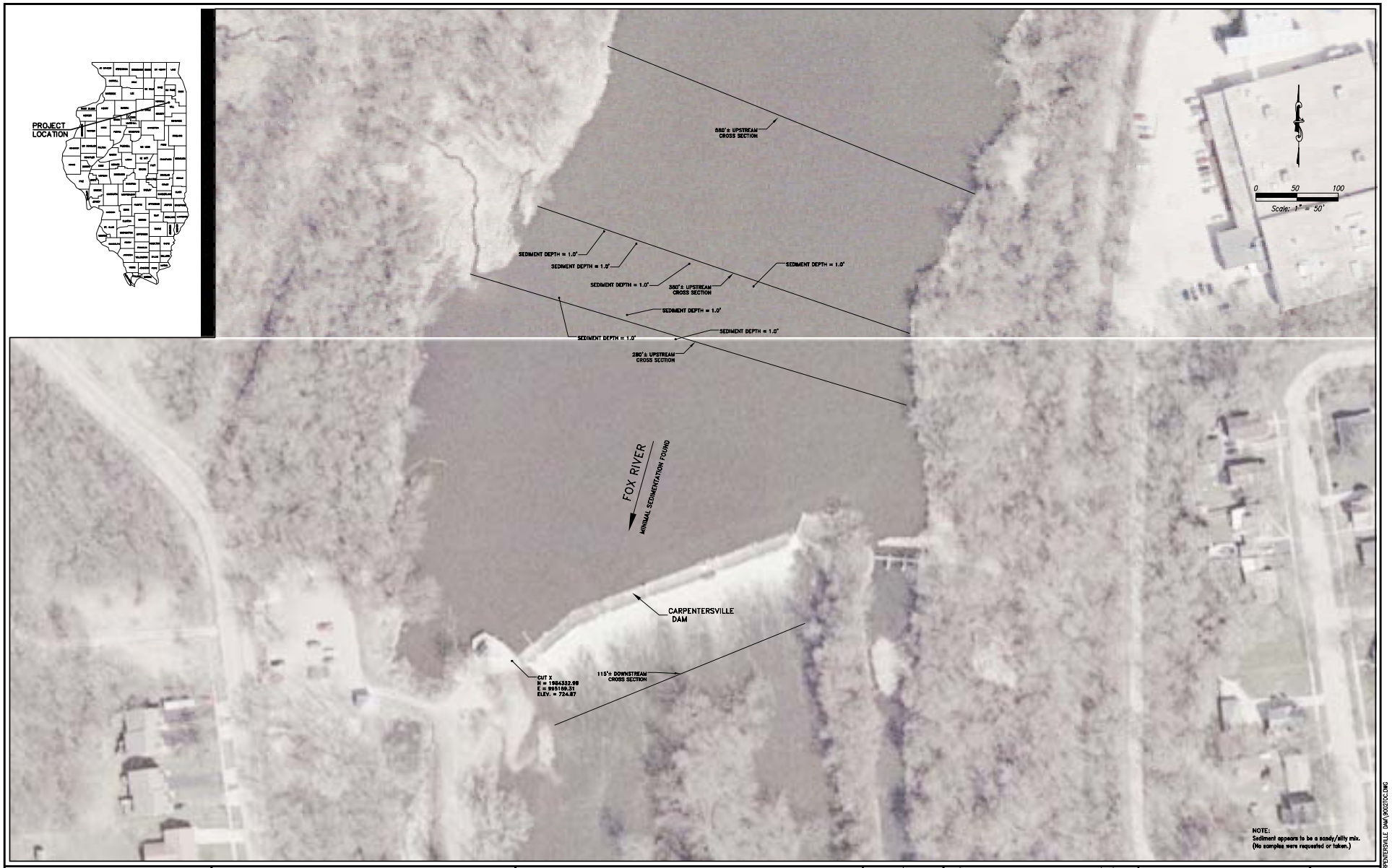

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Figure 5.3.3.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

CARPENTERSVILLE ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

CARPENTERSVILLE DAM – FOX RIVER
DAM SURVEY – PLAN VIEW

DRAWN: JMJ	CHK'D: KDS
DESIGNED: –	APPRV'D: KSS
DATE: 07 February 2007	
SCALE: 1" = 50'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03).

FIELDWORK OCCURED ON JANUARY 27, 2007

SHEET 1
OF 3
DRAWING NUMBER
9002TOC

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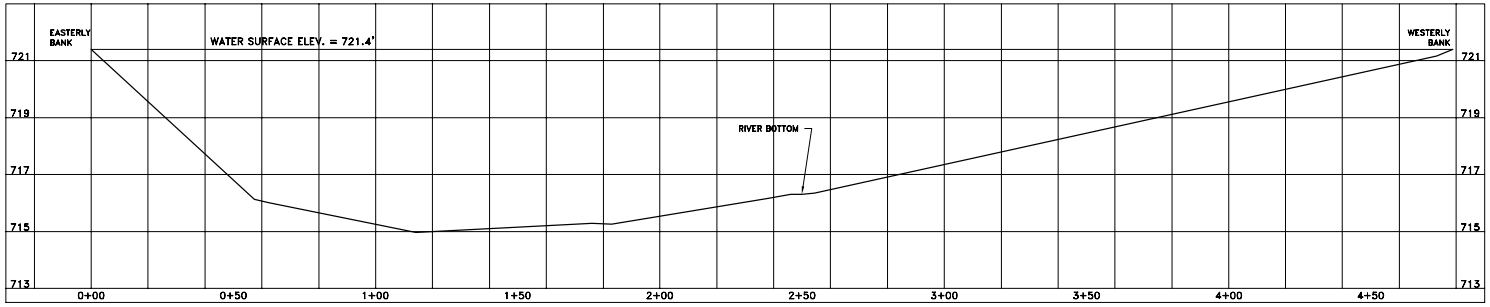
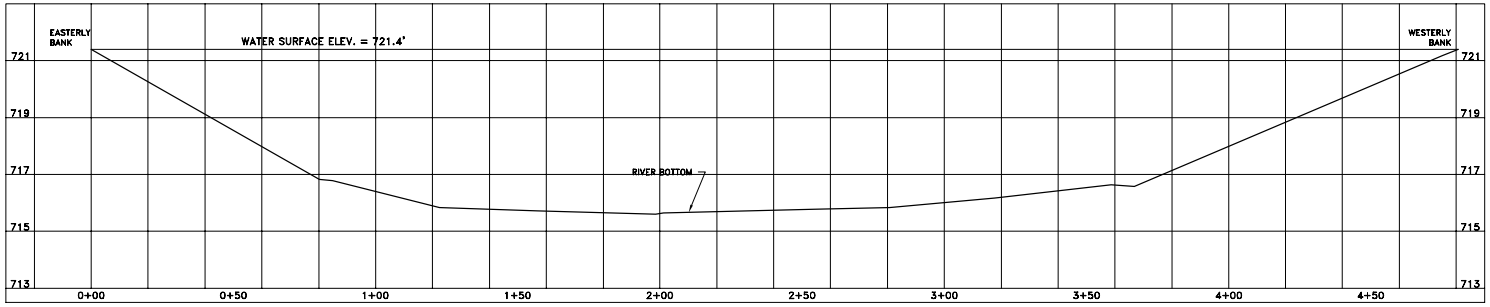
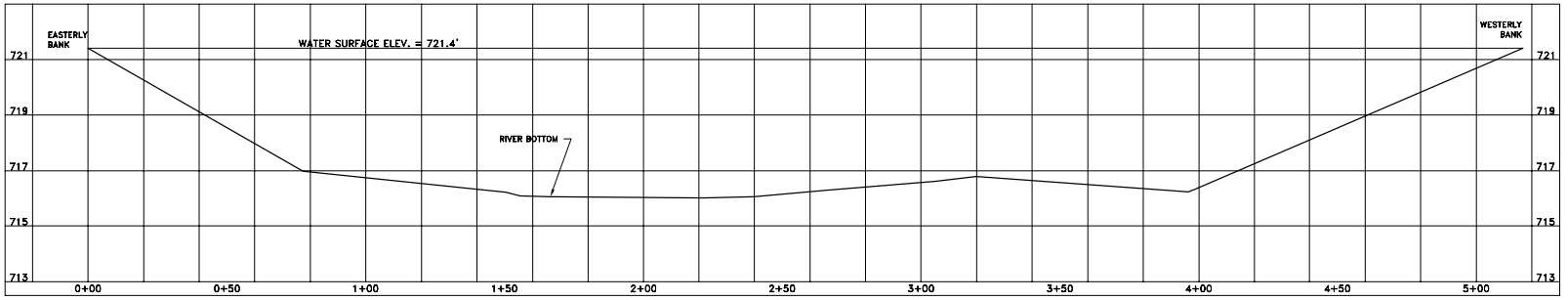


580'± UPSTREAM



380'± UPSTREAM



280'± UPSTREAM

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Figure 5.3.3.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

CARPENTERSVILLE ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

CARPENTERSVILLE DAM – FOX RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: JMJ	CHK'D: KDS
DESIGNED: –	APPRV'D: KSS
DATE: 07 February 2007	
HORIZONTAL SCALE: 1" = 20'	
VERTICAL SCALE: 1" = 2'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

FIELDWORK OCCURED ON JANUARY 27, 2007

SHEET 2
OF 3
DRAWING NUMBER
9002TOC

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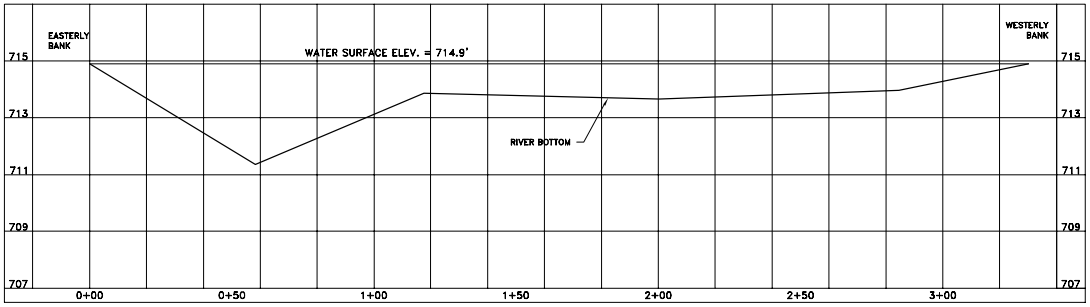

115'± DOWNSTREAM

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Figure 5.3.3.2-4
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

CARPENTERSVILLE ILLINOIS
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

CARPENTERSVILLE DAM – FOX RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: JMJ CHK'D. KDS
DESIGNED: – APPRV'D: KSS
DATE: 07 February 2007
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
PROJECT NUMBER
0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

FIELDWORK OCCURED ON JANUARY 27, 2007

SHEET 3
OF 3
DRAWING NUMBER
9002TOC

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5.3.3.3 Assessment

1) There appeared to be no obvious deficiencies visible on the dam crest although some spalling was noted. However dam crest could not be completely observed due to water overflow.
2) No warning signs were observed at this dam. A warning sign may be present upstream, according to a paddler's website, but was not observed in the field. No warning buoys were observed in this field assessment or that conducted by IDNR.
3) No lighting at either abutment.
4) It was indeterminate whether a roller exists at the dam; however one or more deaths have been reported at the dam.
5) There is a deteriorating fish ladder at the left abutment.
6) The only access to the left abutment is a rickety pedestrian walkway over the millrace. The walkway may be hazardous for foot traffic.
7) There is no rail at the left abutment.
8) The upstream portages are unmarked and too close to the dam crest. There are portages at both abutments. The right bank has an un-marked portage point downstream at the abutment. There is a boat launch downstream of the right dam abutment but, it is very close to the hydraulic jump and presents a hazard to those entering the water. The left bank portage is the old millrace inlet which is blocked by an access road. The left abutment also has an unmarked upstream portage point but it is uncertain where one would put in downstream, along the left bank since the bank is very steep downstream of the dam.

5.3.4 Elgin Kimball Street Dam

5.3.4.1 Existing Documentation

¶ Dam and Location:

Kimball Street Dam	Elgin IL	Fox River	Kane County

¶ Ownership
This dam is owned by the City of Elgin. (IDNR 2006)

¶ History
The first dam at Elgin was built by Folsom Beam in 1836-37. In 1916 a dam existed with head races on each side of river supplying water or water power to many manufacturing concerns. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

5.3.4.2 Visual Reconnaissance

¶ **Dam and Location:**

Kimball Street Dam	Elgin IL	Fox River	Kane County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: John Hood
Company: Kabbes Engineering

¶ **Date & Time:** 2/1/07; 10:45am to 11:40am

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
Dam appears to be in good condition. There were no visible obvious deficiencies noted. The horizontal and vertical alignment of the dam crest and both abutments was good. Left overbank is in good condition. Downstream of the dam, the left overbank has new retaining walls and a pedestrian path. Upstream of dam left overbank, consists of concrete/rubble material. Right overbank both upstream and downstream of dam consist of steep embankment with railroad tracks on top

¶ **Evidence of Roller**
Significant roller present. Roller appears to be a standard hydraulic jump with flow moving downstream. Supercritical flow extends approximately 10 feet beyond toe of the dam face then the jump extend 3 to 5 feet with an additional 5 feet of whitewater.

¶ **Portages**
Boat ramp located downstream of dam on left bank.

¶ **Boat Restraints**
None noted.

¶ **Shore Restraints/Access Limits**
Rail located along left bank near dam.

¶ **Lifesaving Equipment**
None noted.

¶ **Emergency Call Box**
None noted.

¶ **Warning/Information Signage**
Warning sign ("Danger Dam Ahead"), see Photo 3.4.4.2-3 located on upstream face of Kimball Street bridge. No warning buoys were noted at this visual reconnaissance, however IDNR noted five (5) seasonal buoys upstream of the dam as shown on Figure 3.4.5.2-1 and Photos 3.4.4.2-4 & 5.

¶ **Lighting**
None noted.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Pedestrian access by boat ramp on steps downstream of dam on left bank, and by steps upstream of dam. Vehicular access by boat ramp downstream of dam on left bank

¶ **EMS Interview Summary**

Interviewed:
Assistant Chief Rudy Horist
Elgin FD

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   Yes; they have a written "Response policy" protocol that differentiates whether the call pertains to the dam, the river, or other body of water. Calls to the dam require two engines, a truck, and an ambulance, mobilized from three different fire stations. They also mobilize two boats, one above the dam and one below the dam. In addition they have a purpose built rescue craft, manufactured by "The Marine Clinic" in Calgary, Alberta Canada. This last vessel is a 17' long by 8' wide pontoon boat with a 2000 lb. capacity. It is designed to be driven into the discharge of the dam with three personnel tethered aboard. The craft is configured so that the dam discharge falling on the boat drives the boat away from the water cascade-it is necessary for the operator to continually drive the boat into the cascade to maintain a position immediately below the dam. From this craft, they are able to navigate across the roller and access persons in the water. They routinely train with this craft. (Additional information from this manufacturer has been requested.) They estimate that they arrive on site in less than five minutes from dispatch.

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   Yes. They lost two officers in 1974, reported on the plaque identified elsewhere in the report. There was another fatality involving a personal watercraft operator who attempted to jump the dam. The responders arrived on site to find that the victim was already significantly downstream from the dam. The belief is that this accident was not attributable to the hydraulic conditions at the dam; it was a case of significant operator error. Water levels have been lower over the last several years according to the respondent; this has reduced the potential for dam related incidents.

3) Are there any public education measures in place to promote dam safety?

Yes. The City of Elgin, either through their Public Information Officer or City Hall, issues press releases whenever high river flow conditions on the river present unusual hazards. Brochures describing river hazards are available from City Hall. Respondent believed these to be supplied by IDNR.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

Education is always important. The presence of warning buoys in the river seems to help. But they did not stop the significant operator described in #2.

Elgin Kimball Street Dam - Fox River

Elgin, Illinois

CTE | AECOM

Figure 5.3.4.2-1
Elgin Kimball

Photo 5.3.4.2 - 1 - Elgin Kimball Street Dam, Fox River
Roller from left bank

Photo 5.3.4.2 - 2 - Elgin Kimball Street Dam, Fox River
Plaque commemorating EMS workers lost in roller victim rescue effort in 1974.

Photo 5.3.4.2 – 3 – Elgin Kimball Street Dam, Fox River
Warning sign on bridge upstream of dam

Photo 5.3.4.2 – 4 – Elgin Kimball Street Dam, Fox River
Seasonal Warning Buoys and Warning Sign on Bridge. (IDNR, 2006)

Photo 5.3.4.2 – 5 – Elgin Kimball Street Dam, Fox River
Seasonal Warning Buoys. (IDNR, 2006)

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Figure 5.3.4.2-2
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

ELGIN ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

KIMBALL STREET DAM – FOX RIVER
DAM SURVEY – PLAN VIEW

DRAWN: MRR	CHK'D: KDS
DESIGNED: –	APPRV'D: KSS
DATE: 07 February 2007	
SCALE: 1" = 50'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

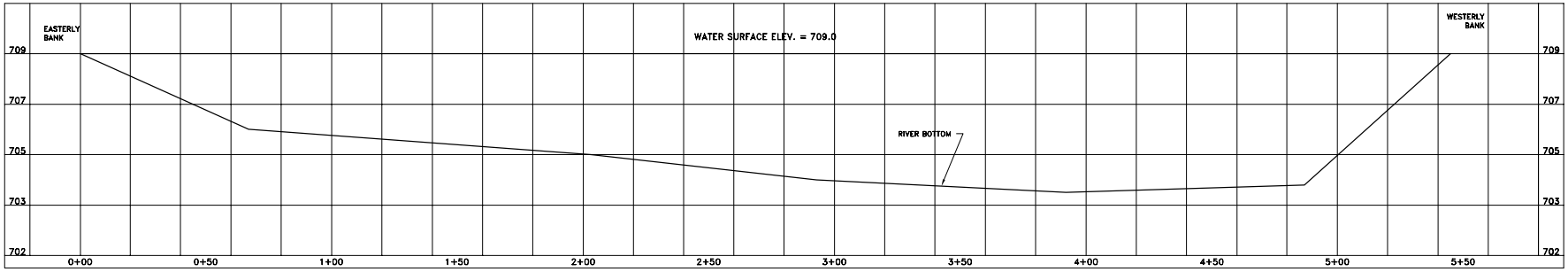
NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03).

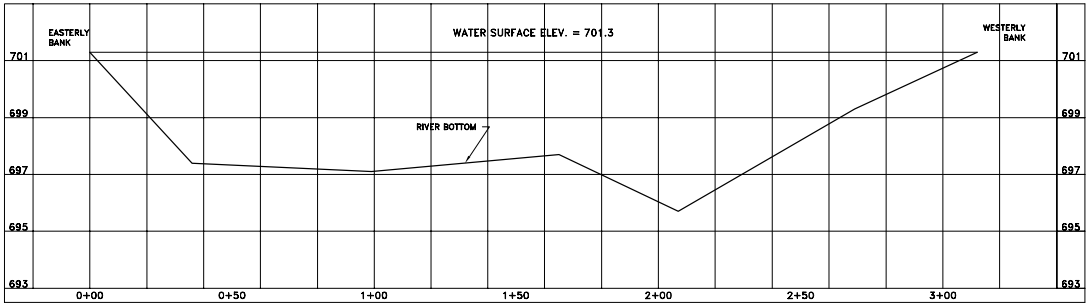
FIELDWORK OCCURED ON JANUARY 27, 2007

SHEET 1
OF 2
DRAWING NUMBER
9002TOE

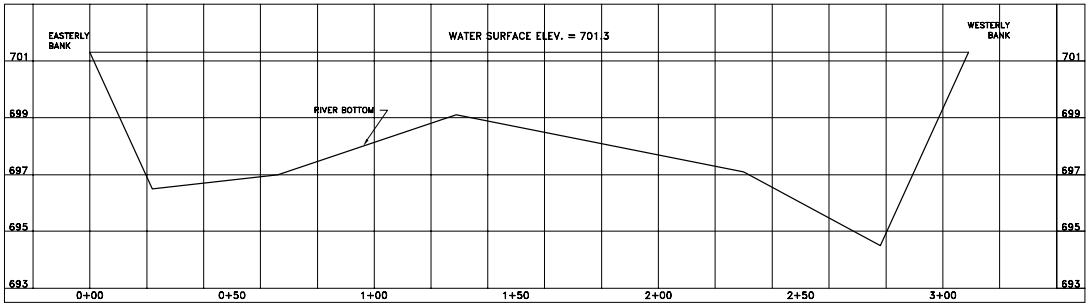
M:\PROJ\0750\9002\TOPO\ELGIN KIMBALL STREET DAM\9002TOE.DWG



650± UPSTREAM



140'± DOWNSTREAM



245'± DOWNSTREAM

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Figure 5.3.4.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

ELGIN ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

KIMBALL STREET DAM – FOX RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: MRR	CHK'D. KDS
DESIGNED: –	APPRV'D: KSS
DATE: 07 February 2007	
HORIZONTAL SCALE: 1" = 20'	
VERTICAL SCALE: 1" = 2'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

FIELDWORK OCCURED ON JANUARY 27, 2007

SHEET 2
OF 2

DRAWING NUMBER
9002TOE

M:\PROJ\07501-9002\TOPO\ELGIN KIMBALL STREET DAM\9002TOE.DWG

5.3.4.3 Assessment

1) No clear upstream location upstream of dam on either bank. Old signs suggest shore is private property. There are broad steps behind the public library along the bike path, left downstream bank. Canoeists can portage, but must cross Kimball Street at light a half block east of river.
2) This is the one Fox River dam noted on the Openlands water time website as having no developed or developable portage.
3) The right bank both upstream and downstream is a steep drop from the railway embankment, which is partially fenced.

5.3.5 South Elgin Dam

5.3.5.1 Existing Documentation

¶ Dam and Location:

South Elgin	Elgin	Fox	Kane
Dam	IL	River	County

¶ Ownership
This dam is owned by the State of Illinois. (IDNR 2006)

¶ History
A dam was built by Gilbert & Teft in 1836, about ¼ of a mile below present site. This dam was washed out in 1837. In 1837-38, Gilbert & Teft rebuilt a dam higher upstream. A saw mill was built in 1838 on the east side of the river. In 1915, a concrete dam existed with head races on each side. The State of Illinois acquired ownership of the dam in 1960 from the Marison Co. The State-Division of Water Resources under contract F.R. - 118, 1960-1 reconstructed the dam, and under contract FR-242, 1973 constructed the west retaining wall, south to the bridge. In 1973, a survey was made of the east retaining wall owned by Marison Co. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

FR 118 - Reconstruction of Fox River Dam at South Elgin, IL, Department of Public Works and Buildings, Division of Waterways, 1960.

FR 242 - Retaining Wall, South Elgin, Kane County, Division of Water Resource Management, IDOT, June 1973.

FR 275 - Retaining Wall, South Elgin, Department of Water Resources, IDOT, January 1976.
OWR Survey at South Elgin Dam, Fox River, Elgin, IL. 2006.

5.3.5.2 Visual Reconnaissance

¶ **Dam and Location:**

South Elgin	Elgin	Fox	Kane
Dam	IL	River	County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/11/2007 9:25 am to 10:30 am

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
The dam has minor erosion along most of the crest. Log debris was noted along the dam crest at both abutments. Additional log debris was noted downstream of the roller left abutment. Abutments have surface cracks and spalling. The downstream portion of the left abutment is an historic structure possibly an old millrace intake to a building that no longer exists which has some deterioration and exposed rebar. The immediate left upstream bank is composed of deteriorating riprap and brush. The immediate right upstream bank has minor erosion along the engineered berm.

¶ **Evidence of Roller**
Yes, strong reverse roller flow downstream below the water surface and upstream at the water surface) 10-15 ft. Logs observed stuck in roller.

¶ **Portages**
No marked portages on right or left upstream banks. An upstream right bank portage could be made along the engineered berm that forms the immediate upstream right bank. The left bank also has several locations which might serve as portage points.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
Both abutments have railings. However both railings have large 2' openings at the bottom of the railing. The upstream right bank railing follows an adjacent berm/access road. The left bank has additional railing along the bike path upstream and downstream of the dam face. The left bank also has a chain link fence on the outside edge of the bike path with a small 4 foot gate near the abutment.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
Standard OWR warning signs are present on each abutment. The standard OWR sign reads "Warning Hazardous Currents Present DO NOT Enter Spillway Area" posted in English and Spanish. These are visible from approximately 15 yards and visible to downstream river users. Several signs provide information to anglers concerning fishing codes. No warning buoys were noted at this visual reconnaissance, however IDNR noted five (5) seasonal buoys upstream of the dam as shown on Figure 3.4.5.2-1 and Photo 3.4.5.2-5.

No portage signage was observed.

¶ **Lighting**
No lighting was observed in the vicinity of the dam.

¶ **Access (pedestrian, vehicular, emergency equipment)**
The dam face is accessible to pedestrians from the right bank from a park and to vehicles by an access road with a locked gate. Left bank is accessible to pedestrians by means of a bike path. A small ambulance could potentially use the bike path.

¶ **EMS Interview Summary**
(TBD)Assistant Fire Chief Bert Lancaster of the South Elgin and Countryside FPD that the response time for an incident at the dam could be approximately 2 minutes, since the fire department is very close to the dam. The immediate response would be to use ropes and a buoy to make a rescue. Plan B is a rescue by boat. Assistant Chief Lancaster noted an incident in May 1984 where a victim went over a dam a boat, but did not sustain injuries, since the water level was low.

Assistant Chief Lancaster noted that the water levels in South Elgin Dam are quite low in the summer and that the greatest risk was during the spring when flows were the greatest. He also stated that since the dam is over 300 feet across, a rope and buoy method can be difficult and taxing on rescuers. Debris, including large rocks and trees interfere with either form of rescue. South Elgin and Countryside FPD would desire a removal of debris from the roller area and an evaluation of the roller area. They would also desire a copy of the dam safety report and assistance in removal of debris near the boil.

Response by written letter from Bert Lancaster, Assistant Fire Chief, South Elgin and Countryside FPD.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   For a victim in the boil, the response plan is to deploy ropes and buoys to work back and forth in the boil. Plan B is to deploy the rescue boat.

   The response time would be approximately 2 minutes. The station is very close to the dam.

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

One victim in a boat went over the dam in 5/84. No injuries were noted due to the low water level at the time of the incident.

3) Are there any public education measures in place to promote dam safety?

None.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

The dam is over 300 ft across. Deploying the rope rescue method takes time to setup. Access is good but just the distance takes a toll on rescuers. The boat to boat method gets closer to a victim, but large rocks and debris (tress hinder rescues. Cleaning out the debris area and evaluating the dam boil would be a great help to the department. Water levels are low most of the year, but in the spring, levels are high and pose a great risk for drowning

0 50 100 200
Feet
1 inch equals 200 feet

South Elgin Dam - Fox River

Elgin, Illinois

CTE | AECOM

Figure 5.3.5.2-1
South Elgin

Photo 5.3.5.2 - 1 - South Elgin Dam, Fox River
View of Dam face, from left abutment. Note heavy roller.

Photo 5.3.5.2 - 2 - South Elgin Dam, Fox River
Left abutment and OWR warning sign. Note large gap in Rail (24").

Photo 5.3.5.2 - 3 - South Elgin Dam, Fox River
Right abutment with OWR warning sign and gaging station. Note large gap in rail (24").

Photo 5.3.5.2 - 4 - South Elgin Dam, Fox River
Emergency Access road on right abutment. Potential area for creation of portage point.

Photo 5.3.5.2 - 5 - South Elgin Dam, Fox River
Seasonal Warning Buoys (IDNR, 2006)

5.3.5.3 Assessment

1) There were no apparent obvious visible deficiencies noted regrading the general dam condition. Visual inspection of dam crest was hindered by high flow.
2) There are warning buoys in the summer, but the lack of signage would not provide warning to upstream river users when the seasonal buoys are removed. This dam has standard white and black OWR signs warning of hazardous currents, visible from approximately 30 feet away, to the downstream, but no other signage.
3) The abutment railings have large, 23-24" bottom openings. These might be passable by a small child or by a pedestrian who might slip.
4) The left abutment has very limited accessibility for emergency vehicles, due to a chain link fence with a pedestrian opening near the abutment.
5) Vehicular access is very good to the right abutment and to the downstream right bank.
6) A ledge exists as part of a right bank retaining wall along the right abutment at the downstream face of the dam. This ledge presents the opportunity for a pedestrian to walk the ledge and slip directly into the roller.
7) There were no established, marked portage points found above or below the dam.

5.3.6 St. Charles Dam

5.3.6.1 Existing Documentation

¶ **Dam and Location:**

St. Charles Dam	St. Charles IL	Fox River	Kane County

¶ **Ownership**
This dam is owned by the State of Illinois. (IDNR 2006)

¶ **History**
In 1916, a concrete and wood dam existed with a head race on the east side of the river. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

5.3.6.2 Visual Reconnaissance

¶ **Dam and Location:**

St. Charles	St. Charles	Fox	Kane
Dam	IL	River	County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/11/2007; 7:55 am to 9:00 am

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
The dam appeared to have a deficiency which extends more than half way along the face of the dam. The dam may have had a portion of its face shear off. However, flows do not appear affected and no other deficiencies were visible. The right abutment is a building (Hotel Baker) with some spalling, surface cracks and patching in place. The left abutment is adjacent to a fish ladder which has some structural damage and is partially failed. Also near the fish ladder, there is an approximately 5 ft. by 5 ft. area of damage to the flagstone abutment wall.

¶ **Evidence of Roller**
Yes, reverse (flow downstream below the water surface and upstream at the water surface) roller appears to occur extending approximately 10 feet downstream of dam face.

¶ **Portages**
Upstream portages are present on each side of the river. River users are directed by a sign on the immediate upstream pedestrian bridge to use the left portage. This portage appears to be a long area of bank with a 2 to 3 foot vertical wall where one can somewhat haphazardly exit a canoe. It appears that the downstream, left bank portage is at the stairway just downstream of the dam face. One paddler's website suggested that this portage could be dangerous since it can place you into the roller.

The right upstream portage is at water level and a better design. However, there does not appear to be a portage on the right bank, downstream of the dam.

There are no signs at any of the portages.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
The right abutment is a private restaurant/hotel with approximately a 4-foot wall limiting access to the dam face. The left abutment has a 2'10" rail along a significant portion along the upstream and downstream banks of the dam. However there are stairs with a canoe portage just downstream of the left dam face which allows pedestrians quite close to the roller.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
A few small warning signs: (Danger: Dam ahead portage left) on the upstream pedestrian bridge indicate the upcoming dam and the presence of a canoe portage on the river left. No warning signs were observed at the abutments.

No warning buoys were noted at this visual reconnaissance, however IDNR noted five (5) seasonal buoys upstream of the same as shown on Figure 3.4.6.2.-1 and Photo 3.4.6.2-7.

¶ **Lighting**
Lights are present at both abutments. The dam face is not lit.

¶ **Access (pedestrian, vehicular, emergency equipment)**
The right abutment is accessible by foot only from an outdoor dining area accessible only through the hotel. The left abutment is accessible by pedestrians from an adjacent sidewalk. The dam face is accessible from the portage just down stream of the dam. Vehicular access good along upstream right bank from parking lot adjacent to riverwalk.

¶ **EMS Interview Summary**

Interviewed Assistant Chief Joe Schellstreet with St. Charles Fire Department.
He be reached directly at 630-762-6984

St. Charles has 3 fire houses.

St. Charles has a fire house east of the dam and 50 feet (north?) from the face.

If there is a call at the dam, it is automatically a "River Rescue" which results in 3 things:

1) On the ground response with in 30 seconds to 1 minute, due to the proximity of the fire house to the dam. Response would involve:
   - ¶ Use of life ring/throw rope to attempt an initial rescue.
   - ¶ If low flow, water is very shallow and fire fighters can enter water and attempt rescue, but not enter boil.

2) Water response (approximately 7 minutes to on-site) using 3 boats owned by St. Charles FPD and 12 dive team members with dry suits and fully encapsulated communication system.

Boat launch is ¼ mile south of dam. 3 boats are:

- Zodiac boat
  - can be tied off and used to rescue directly from boil
  - a fire fighter could potentially enter the boil, if worst came to worst, but this is not the preferred method of rescue.
  - St. Charles practices zodiac boat boil rescues.
- Air boat
  - With a propeller, such as used in a swamp
- John boat
  - Standard rescue boat

3) Geneva Fire Department would respond and bring and additional boat, by means of the Additional Aid Plan.

- Reciprocally, St. Charles would respond to any Geneva water rescues.

Assistant Chief Schellstreet did not know of any deaths or accidents that had occurred at the dam.

There are no public education measures in place that he knows of.

Assistant Chief Schellstreet suggested that it was in St. Charles best interest not to irritate fishermen, who are also voters. He stated the desire to be granted authority to remove or if necessary ticket individuals who come too close or enter the boil. He was told be IDNR attorneys that only Conservation Department Police had authorities to do so. He did not believe St. Charles had the authority to create a local, enforceable code, as advised by IDNR. Children have been seen playing in the boil and were warned of the danger and acquiesced, but he desired the authority to prevent someone from putting them self in danger.

Assistant Chief Schellstreet stated that potential redesign of the dam (including placing a notch in the dam or adding steps) would be a good public safety measure.

<u>Additional information provided:</u>
There is a floating portage on the left bank during warmer months. The river is widely used by canoeists who portage on the left using this portage.

<u>Potential follow-up questions:</u>
Opinions on

- Life buoys
- Call box
- Assistant Chief Schellstreet's number of years of experience

0 50 100 200
Feet
1 inch equals 200 feet

St. Charles Dam - Fox River

St. Charles, Illinois

CTE | AECOM

Figure 5.3.6.2-1
St. Charles

Photo 5.3.6.2 - 1 - St. Charles Dam, Fox River
Dam face, from left abutment. Note structural crack visible in weir structure.

Photo 5.3.6.2 - 2 - St. Charles Dam, Fox River
Dam face. Note structural crack visible in weir structure.

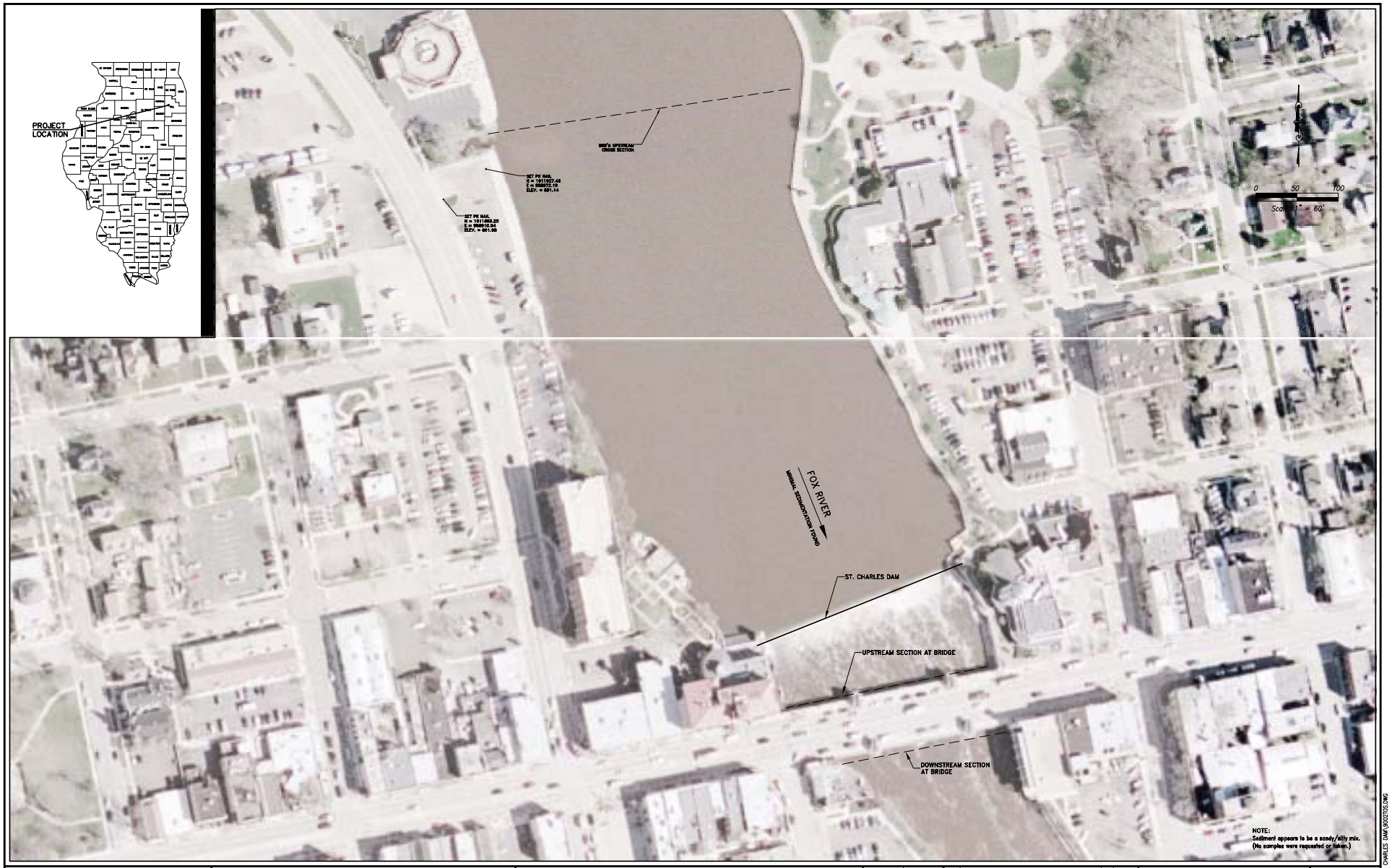
Photo 5.3.6.2 - 3 - St. Charles Dam, Fox River
Downstream left bank, looking downstream. Stairs/portage and boat launch on left bank.

Photo 5.3.6.2 - 4 - St. Charles Dam, Fox River
Upstream left bank, looking downstream. Canoe portage area along on 2-3' ledge.

Photo 5.3.6.2 - 5 - St. Charles Dam, Fox River
Upstream pedestrian bridge. 2 signs on bridge: "Danger Dam Ahead, Portage left". Also 2 small green warning signs indicating dam and portage to left.

Photo 5.3.6.2 - 6 - St. Charles Dam, Fox River
Upstream right bank. Boat launch/Canoe Portage.

Photo 5.3.6.2 - 7 - St. Charles Dam, Fox River
Seasonal Warning Buoys, from left bank. Note stairs and portage on right bank.



DLZ
DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, INDIANA 46304
TELEPHONE (219) 764-4700 FAX (219) 764-4156

Figure 5.3.6.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

ST. CHARLES ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

ST. CHARLES DAM – FOX RIVER
DAM SURVEY – PLAN VIEW

DRAWN: MRR	CHK'D: KDS
DESIGNED: –	APPRV'D: KSS
DATE: 07 February 2007	
SCALE: 1" = 60'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

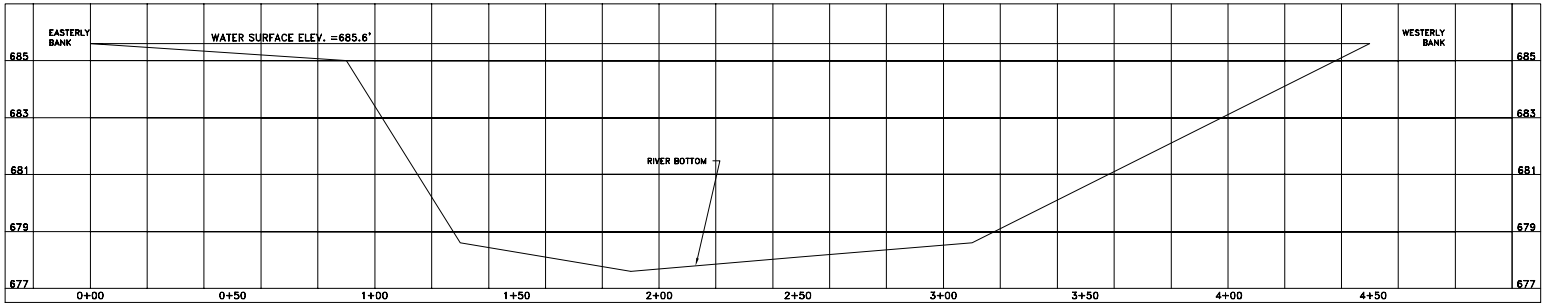
NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03).

FIELDWORK OCCURED ON JANUARY 27, 2007

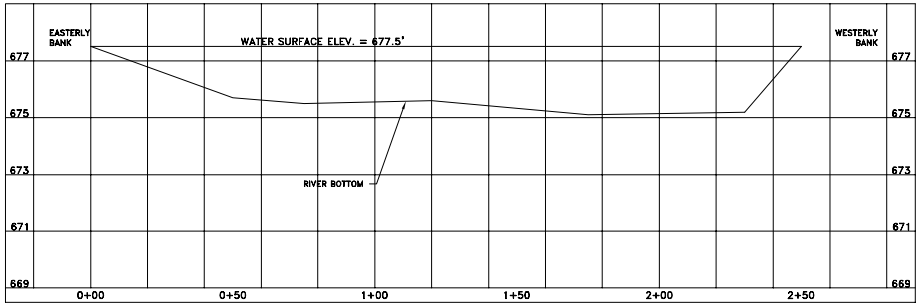
SHEET 1
OF 2
DRAWING NUMBER
9002TOS

M:\PROJ\0750\9002\TOPO\ST. CHARLES DAM 9002TOS.DWG



890'± UPSTREAM

UPSTREAM FACE OF BRIDGE



DOWNSTREAM FACE OF BRIDGE

DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, INDIANA 46304
TELEPHONE (219) 764-4700 FAX (219) 764-4156

Figure 5.3.6.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

ST. CHARLES ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

ST. CHARLES DAM – FOX RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: JMJ CHK'D: KDS
DESIGNED: – APPRV'D: KSS
DATE: 07 February 2007
HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'
PROJECT NUMBER
0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

FIELDWORK OCCURED ON JANUARY 27, 2007

SHEET 2
OF 2
DRAWING NUMBER
9002TOS

M:\PROJ\0750\9002\TOPO\ST. CHARLES DAM 9002TOS.DWG

5.3.6.3 Assessment

1) There appears to be some damage to the dam face that extends more than halfway across the dam. A portion of the dam may have been sheared off. However, flows appear unaffected. The fish ladder at the left abutment also has some structural damage and appears partially failed.
2) This dam is lacking sufficient warnings to the public outside of the general use season (approximately March 15th to October 15th). There are small warning signs (i.e. "Danger Dam", "Portage ahead left") present at the upstream bridge, but these are not very visible from the river because they are located above the low chord of the bridge at least 30 ft. above the water surface.
3) Portages are unmarked. Although signage on the upstream bridge indicates a portage on the left bank, no portage was observed except a 3 foot ledge along the left bank which might be used with some difficulty to exit the water. A boat portage is just downstream of the dam face located on the left bank. One paddling source website reviewed stated that, depending on the day, this entrance may lead directly into the roller of the dam. The right bank also has an upstream portage which is unmarked, approximately at the same location as the warning buoys. However, no downstream portage was observed on the downstream right.

5.3.7 Geneva Dam

5.3.7.1 Existing Documentation

¶ Dam and Location:

Geneva Dam	Geneva IL	Fox River	Kane County

¶ Ownership
This dam is owned by the State of Illinois. (IDNR 2006)

¶ History
In 1916, a head race and a mill were on the east side of the river and a head race and a foundry were on the west side of the river. The State Div. Of Waterways under contract FR-118, 1960-1 constructed the dam south of the old dam which was then removed. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

5.3.7.2 Visual Reconnaissance

¶ **Dam and Location:**

Geneva Dam	Geneva IL	Fox River	Kane County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/10/2007; 3:00 pm to 3:57 pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
The dam has no obvious visual deficiencies. Some erosion is present at the right downstream portion of the abutment. The right bank exhibits erosion upstream and downstream of the dam. The right downstream bank is quite steep. The left bank both upstream and downstream is composed of riprap and is in very good condition with minimal erosion.

¶ **Evidence of Roller**
Yes, debris observed stuck in roller. Reverse roller (flow downstream below the water surface and upstream at the water surface) extends approximately 25 feet downstream of dam. Backflows were readily observed.

¶ **Portages**
Unmarked portages are present on the left bank both upstream and downstream of the dam. The upstream portage is a ramp with a rail and carpeting. The downstream portage is sufficiently downstream of the roller, just upstream of the immediate downstream bridge.

The right abutment also has stairs just downstream that might serve as a boat/canoe launch. However, this boat launch is close to the face of the dam and may present a hazard to someone attempting to use the launch or attempting to wade into the channel to fish.

There are no signs at any of the portages.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
Both abutments have 3'10" rails. However, rails have 17" openings at the bottoms which might be passable by a small child. The left bank has erosion protection and steep banks which dissuade public access. The right upstream has prairie grass in place and signs "keep off grass" which also serves well as a barrier. Just downstream of the right abutment is a somewhat crooked path which might present a tripping hazard to a pedestrian at night or under slippery conditions and could lead to one ending up in the river, near the roller.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
The dam has standard OWR warning signs ("Warning Hazardous Currents Present DO NOT Enter Spillway Area" posted in English and Spanish) and green and white signs, see photo 3.4.7.2-4 created by the City of Geneva warning of the dam to both pedestrians and river users. The standard OWR warning signs are visible to downstream users only and are readable from 15 yards. There were no warning signs for upstream river users. No warning buoys were noted at this visual reconnaissance, however IDNR observed five (5) seasonal warning buoys upstream of the dam as shown in Figure 3.4.7.2-1 and Photo 3.4.7.2-7.

¶ **Lighting**
The right bank has some lighting along the path. The left bank does not appear to have lighting. A single spotlight from the State Street bridge appears to illuminate the right face of the dam.

¶ **Access (pedestrian, vehicular, emergency equipment)**
There is vehicular access to the right abutment by means of an alley and by foot. The left abutment is adjacent to several parking lots and is accessible by foot.

¶ **EMS Interview Summary**

Response by written letter from Geneva Fire Chief Steve Olson.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   The department has an established SOG for rescues involving warm and cold water rescues with a specific section on incidents involving the dam. Our average response time is 4:00 minutes.

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   A. In July 1986, a 22 year old man fishing at the foot of the dam was drawn in by the undertow. People nearby and responding emergency personnel were able to recover and resuscitate the victim from the "boil" and transport him to the hospital. He was discharged several days later. As a result of this and other incidents the Illinois

Department of Natural Resources posted bi-lingual signs on either side of the dam and overlooks warning people to stay away due to the undertow.

B. On May 31, 1993 between midnight and 1:00 am, a man and a woman went out to the river in a row boat just north of the dam. They drifted too close, the woman jumped out and swam to shore and the man rode the boat over the dam and drowned. His body was recovered two days later. Alcohol was likely a factor in this incident.

C. On June 29, 1997 a 17 year old female fishing at the foot of the dam was drawn in by the undertow. He was pulled from the water in cardiac arrest, resuscitated by department staff and transported with a pulse and spontaneous respirations. He was later released from the hospital.

D. On June 1, 1999 a 49 year old man jumped into the river immediately above (the dam) and went over the dam becoming trapped in the boil. He was recovered by department personnel in respiratory arrest. He was resuscitated, transported to the hospital and released several days later. It was later determined that he deliberately entered the water with the intent of going over the dam.

3) Are there any public education measures in place to promote dam safety?

As previously mentioned the Illinois Department of Natural Resources has posted signs with English and Spanish warning of the undertow at the base of the dam. These can be clearly seen by anyone standing in the water. Additionally, with one exception, all victims have been visitors to the area.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

We offer no suggestions at this point.

0 50 100 200
Feet
1 inch equals 200 feet

Geneva Dam - Fox River

Geneva, Illinois

CTE | AECOM

Figure 5.3.7.2-1
Geneva

Photo 5.3.7.2 - 1 - Geneva Dam, Fox River
Dam face, taken from right abutment. Note debris in roller.

Photo 5.3.7.2 - 2 - Geneva Dam, Fox River
Downstream right bank. Portage/stairs.

Photo 5.3.7.2 - 3 - Geneva Dam, Fox River
Downstream right bank. Depressed asphalt area. May present hazard to pedestrians.

Photo 5.3.7.2 - 4 - Geneva Dam, Fox River
Left Abutment. Warning sign posted by City of Geneva.

Photo 5.3.7.2 - 5 - Geneva Dam, Fox River
Left bank, looking upstream. Portage ramp with rail.

Photo 5.3.7.2 - 6 - Geneva Dam, Fox River
Left bank, downstream of dam face. Portage/boat launch.

Photo 5.3.7.2 - 7 - Geneva Dam, Fox River
Seasonal Warning Buoys (IDNR, 2006)

S:\232\2320805ff\eagle point\geneva.dwg

NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON NGS/OPUS DIFFERENTIAL GPS SOLUTION. FIELDWORK OCCURRED ON DECEMBER 12, 2006. CONTROL IS SHOWN ON SHEET 2

FIGURE 5.3.7.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

GENEVA DAM - FOX RIVER
KANE COUNTY, ILLINOIS
DAM SURVEY - PLAN VIEW

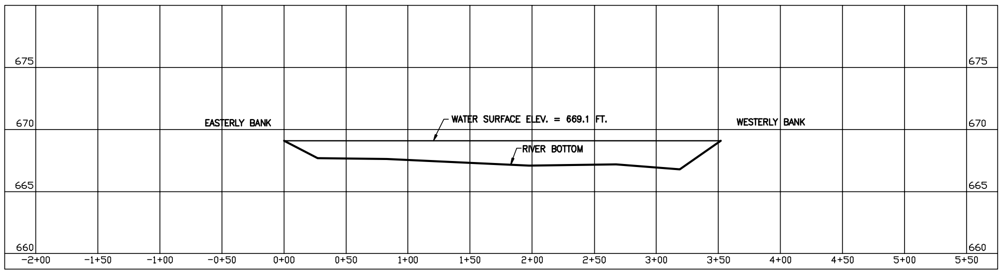
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

MAURER STUTZ, INC.
ENGINEERS SURVEYORS
"WORKING with YOU by DESIGN"
7615 NORTH HARKER DRIVE
PEORIA, ILLINOIS 61615
PH. (309) 693-7615
FAX (309) 693-7616
1670 EAST ASH STREET
CANTON, ILLINOIS 61520
PH. (309) 647-7531
FAX (309) 647-6155
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

REVISIONS

No.	Date	Description

Designed By: MA
Drawn By: KDP
Reviewed By: JCC
Date: 19 December 2008
Project No.: 2320805ff
Drawing:
1 OF 2



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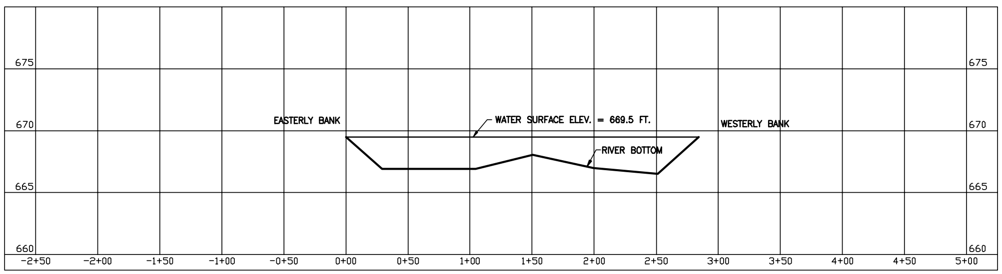
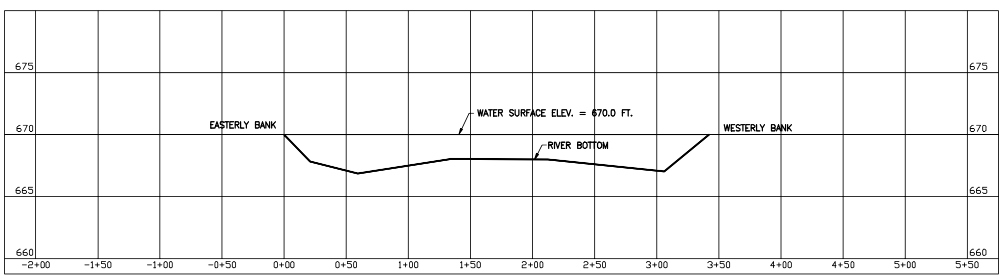
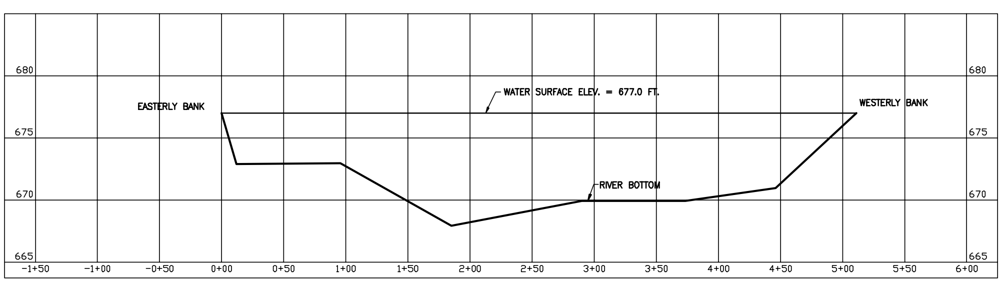


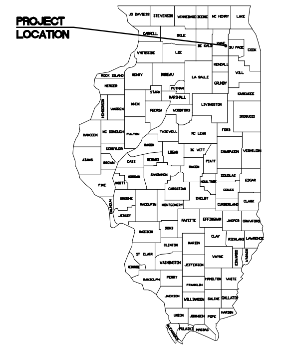
440'± DOWNSTREAM

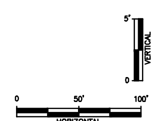


200'± DOWNSTREAM



150'± UPSTREAM





SCALES

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

REVISIONS		
No.	Date	Description
1	1/29/07	Revised cross sections

MAURER-STUTZ, INC.
ENGINEERS SURVEYORS
"WORKING with YOU by DESIGN"
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PEORIA, ILLINOIS 61615
PH. (309) 693-7615
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CANTON, ILLINOIS 61520
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ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

Sheet Title:

GENEVA DAM - FOX RIVER
KANE COUNTY, ILLINOIS
DAM SURVEY - CROSS SECTIONS

Project:

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

Client:

FIGURE 5.3.7.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 1

2 OF 2

S:\232\23206058\eagle point\geneva.dwg

5.3.7.3 Assessment

1) While, well-designed portages are placed on the left bank upstream and down stream of the dam, there are no signs indicating the presence or location of the portages.
2) The right abutment has stairs that might serve as a boat/canoe launch. However, this launch is quite close to the downstream face of the dam just past the roller and presents a hazard to someone attempting to use the launch or attempting to wade into the channel to fish.
3) Both abutment rails have large, 17" bottom openings. These might easily be passable by a small child or by a pedestrian who might slip near the rail.
4) Just downstream of the right abutment, there is a steep area over which a pedestrian might trip and enter the channel in close proximity to the dam face. This is especially dangerous at night, since this area appears to be unlit.
5) The warning signs at both abutments adjacent to the dam crest can only be seen from downstream. They are difficult to see from the downstream water surface because they are at the top of the abutment which is above the dam crest. The front of signs reading "Hazardous Currents Presents DO NOT Enter Spillway Area" is too small. There signs are also not lighted.

5.3.8 Batavia Dam

5.3.8.1 Existing Documentation

¶ **Dam and Location:**

North Batavia Dam	Batavia IL	Fox River	Kane County

¶ **Ownership**
This dam is owned by the City of Batavia. (IDNR 2006)

¶ **History**
In 1834, Titus Howe built a dam and saw mill at the lower end of the island. In 1835, William Van Northwick and his son bought out Howe and moved this dam to the head of the island. They operated a saw and grist mill. In 1916, a concrete dam existed in the east channel connecting Island 193 to the east bank of Fox River. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

Replacement of Upper Batavia Dam, Kane County, IL, IDNR, 2000.
OWR Survey at North Batavia Dam, Fox River, Batavia, IL. 2006.

5.3.8.2 Visual Reconnaissance

¶ **Dam and Location:**

North Batavia	Batavia	Fox	Kane
Dam	IL	River	County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/10/2007; 12:27 pm to 1:45 pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
The dam is breached for approximately 35 feet at the left abutment. The dam has significant cracking and chipping along and throughout the remaining dam crest. The left abutment is an old factory which is deteriorating and in need of immediate attention. The right abutment has the remains of a training wall which may have been removed or possible just failed; some flow goes outside of the channel at this point and over a small waterfall and re-enters the channel. An historic stone wall, in deteriorating condition, serves as a secondary right abutment upstream and there is a new concrete wall downstream of the dam face.

¶ **Evidence of Roller**
Yes, the roller extends 10 to 15 feet downstream in addition the right abutment has a roller extending approximately an additional 15 feet downstream of the dam face. Just adjacent to the left abutment there are heavy rapids, with a very strong current and an apparent roller which extends approximately 30 feet downstream of the breached dam face. All appear to be reverse rollers (flow downstream below the water surface and upstream at the water surface).

¶ **Portages**
The right bank has a marked upstream portage just upstream of the dam face. However the portage appears to be only a sign, Photo 3.4.8.2-4, and lacks any visible design or a rail. It is quite close to the dam face. The downstream portage is a ramp leading to a mildly sloped sandy area. There is no sign. Additionally, there is a set of stairs at the Depot Pond further downstream which might be used as a portage.

The left upstream bank does not appear to have any feasible portage points for at least a quarter mile. There appears to be a boat launch from a road that dead ends at the river.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
There are no shore restraints at either abutment or along the shores. Pedestrian access is mainly from the right abutment along the foot path upstream and downstream. The right abutment is mostly non-existent and pedestrians can readily approach the face of the dam. With significant difficulty and risk, the left abutment and adjacent area can be reached by a pedestrian. This area is very hazardous due to the extremely heavy current present.

¶ **Lifesaving Equipment**
None observed. There was a public life buoy observed near the Depot Pond area.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
No warning signs or buoys could be confirmed as visible at Batavia dam during this visual reconnaissance. However a possible buoy is shown in Photo 3.4.8.2-7. This may have been flanked by a sign of some sort. This could not be confirmed during the visual reconnaissance. No warning buoys were observed during the IDNR field inspection. However IDNR field operations crews indicate that they place buoys upstream of the dam. The only confirmed signs observed were the river right portage marking, historical information about the dam and information for fishermen concerning fishing regulations.

¶ **Lighting**
The right bank has lighting along the foot path. The left bank does not appear to have lighting. The dam face appears to be unlit.

¶ **Access (pedestrian, vehicular, emergency equipment)**
There is vehicular access to the right abutment by means of access road behind the residential apartments. Pedestrian access is by the park foot path. The left abutment is inaccessible to vehicles and accessible with great risk by pedestrians.

¶ **EMS Interview Summary**

Phone interview with Battalion Chief Ed. He has 18 years of experience with Batavia Fire and Rescue.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   Batavia EMS has response plans for preplanned incidents at the dam. They do not have a specific incident action plan. Batavia also has a set of Safety Policies for water rescue. They can be described as1) Throw , 2) Tow, 3) Row, 4) Go. Initially they would attempt to throw a life ring or rescue bag, if unsuccessful, then set up a tow line, if still unsuccessful, send out a boat anchored to the shore. Finally, they would enter the water if necessary. Fire engines are equipped with cold rescue suits.

Batavia's response time would be approximately 4 minutes. A boat could be onsite in 10 minutes. A water rescue team would consist of 2 engines, an ambulance, 1 Batavia boat and 2 mutual support boats from other departments.

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

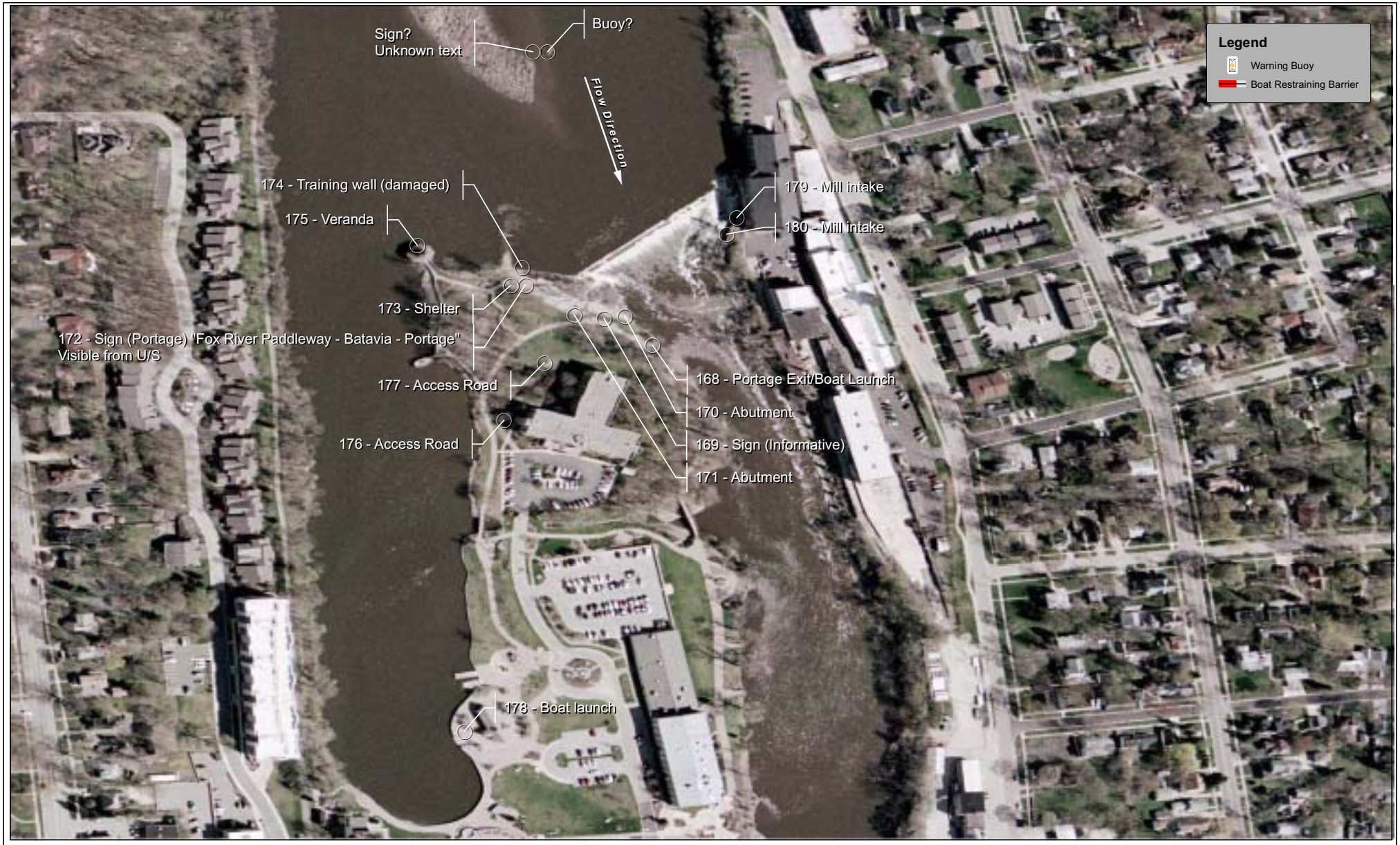
The Battalion Chief was not aware of any incidents that happened at the dam. He interviewed others who had been with the fire department but did not come across any incidents.

3) Are there any public education measures in place to promote dam safety?

According to the Battalion Chief, there are seasonal articles and press releases in area newspapers promoting dam safety.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

Batavia EMS could use better access points above and below the dam where rescue boats could be anchored to the shore.



0 50 100 200
Feet
1 inch equals 200 feet

Batavia Dam - Fox River

Batavia, Illinois

CTE | AECOM

Figure 5.3.8.2-1
Batavia

Photo 5.3.8.2 - 1 - Batavia North Dam, Fox River
Right abutment area. Batavia Dam face. Note missing left training wall.

Photo 5.3.8.2 - 2 - Batavia North Dam, Fox River
Typical section of dam face. Note damaged concrete.

Photo 5.3.8.2 - 3 - Batavia North Dam, Fox River
Right abutment. Note missing training wall.

Photo 5.3.8.2 - 4 - Batavia North Dam, Fox River
Right bank, upstream. Sign for portage, but no visible portaging area.

Photo 5.3.8.2 - 5 - Batavia North Dam, Fox River
Right bank, downstream. Boat launch/portage.

Photo 5.3.8.2 - 6 - Batavia North Dam, Fox River
Dam face left abutment. Breached portion of dam. Heavy white water rapids.

Photo 5.3.8.2 - 7 - Batavia North Dam, Fox River
Left, just downstream of dam breach. Deteriorating abutment area.

Photo 5.3.8.2 - 8 - Batavia North Dam, Fox River
Left bank, looking upstream.
Apparent buoy and possible sign to river-left of island.

5.3.8.3 Assessment

1) The right bank just upstream of the dam crest has a missing training wall/abutment which allows water to flow outside the main channel and drop over rock out croppings not intended to be part of the dam spillway. No railing or barrier is present at this abutment.
2) The left portion of the dam crest adjacent to the abutment, adjacent to an old mill, is breached/partially failed over approximately 35 feet. This breach creates an area of heavy white water with a very strong current which may attract thrill-seeking kayakers. The left abutment consists of an old mill/factory that appears quite deteriorated and in need of immediate attention. No railing or barrier is present at this abutment.
3) The left abutment and immediate downstream area is inaccessible to vehicular traffic.
4) The dam face generally exhibits structural cracking as well as missing pieces of concrete in sporadic locations. The overall integrity of the dam is questionable and should be considered for immediate attention.
5) There are no warning signs to the public or to river users.
6) There appears to be a lack of warning buoys in the upstream channel.
7) There is a portage location sign along the right upstream bank but the upstream right portage is in close proximity to the dam and therefore presents a hazard.

5.3.9 North Aurora Dam

5.3.9.1 Existing Documentation

¶ Dam and Location:

North Aurora Dam	North Aurora IL	Fox River	Kane County

¶ Ownership
This dam is owned by the State of Illinois. (IDNR 2006)

¶ History
At North Aurora, in 1833-34, Peter Schneider built a saw mill and dam. In 1916, a dam existed connecting Island 166 with the west bank of the river. A mill and tail race was on the east side, a head race and mill was on the west side. In 1975, the State of Illinois acquired ownership of the dam and constructed the stepped spillway under FR-269 at a cost of $572,800 (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

FR 269- North Aurora Dam, Department of Waterways, IDOT, February 1975.

OWR Survey at North Aurora Dam, Fox River, North Aurora, IL. 2006.

5.3.9.2 Visual Reconnaissance

¶ **Dam and Location:**

North Aurora Dam	North Aurora IL	Fox River	Kane County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/9/2007; 1:50 pm to 3:00 pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
The dam is a step structure. Slight spalling was observed on the first two steps. The right abutment had minor chipping and the left abutment appeared in new condition.

¶ **Evidence of Roller**
Yes, a roller was observed extending to between 10 and 20 downstream of the dam. Roller appeared to be a hydraulic jump. Whether this was a reverse roller is indeterminent.

¶ **Portages**
The right upstream bank has an unmarked portage adjacent to the dam abutment. It has a mild sandy slope and is quite close to the dam face. There are two unmarked portage locations on the downstream right bank: 1) A set of stairs adjacent to the abutment and very close to the dam face; and, 2) portage the IL 56/ State Street bridge, the immediate downstream bridge.

The left bank has potential upstream and downstream portage points which might be used on occasion by river users.

There are no signs at any of the portages.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
The right and left abutments have a 58” and 56” rails, respectively. The upstream left bank has fencing preventing pedestrian access to a whirl pool created by an intake to the left millrace, Photo 3.4.9.2-5.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
The dam has standard OWR warning signs ("Warning Hazardous Currents Present DO NOT Enter Spillway Area", posted in English & Spanish) visible to downstream river users only. These signs are readable from 15 yards. There were no warning signs for upstream river users. According to IDNR, buoys were in place during the warmer months. IDNR observed six (6) seasonal warning buoys upstream of the dam, one (1) seasonal warning buoy is placed downstream of the dam as shown in Figure 3.4.9.2-1 and Photos 3.4.9.2-6 & 7. No warning buoys were noted at this visual reconnaissance.

¶ **Lighting**
The left bank was lamp posts near the abutment. The right abutment is unlit. Three (3) steel lights on the IL-56 bridge illuminate the dam face.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Stairs at the near right abutment provide access to the dam face. Vehicular access is limited or unavailable on both upstream banks. Pedestrian access is available to all areas.

¶ **EMS Interview Summary**
Chief Steve Miller of the North Aurora Fire Department stated that there is an emergency plan in place for rescues at can respond to and incident at the dam. He estimated the response time at under 6 minutes. Chief Miller sited a drowning which occurred at the dam in June 1995 where 3 boys went over the dam in air mattresses. 2 of the boys were able to escape but one boy drowned. (Chief Miller did not believe there were any public safety measures currently in place at the dam.)

Interviewed Chief Steve Miller with North Aurora Fire Department. He has 35 years of experience with the department. He can be reached at 630-897-9698.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   Yes, the North Aurora Fire Department has a plan for dam rescue. It involves dispatching an initial response team with ambulances and fire engines, with rescue attempts in the water or through rescue discs. North Aurora would also immediately launch their 2 rescue boats, one or both are zodiac-type boats. Fire fighters are equipped with cold water/ gumby-type suits. Aurora Fire Department would be dispatched to bring their dive team to the scene. 2 additional boats would be dispatched from other departments. Fire fighters are not allowed to enter the boil.

   Chief Miller estimated a response time of 6 minutes for North Aurora Dam.

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

Chief Miller estimated that accidents occur at the dam approximately every 10 years.

In June 1993, three boys were riding on rafts and going down the Fox River, going over dams. At North Aurora Dam, the three boys got thrown from there raft and 1 boy was trapped in the roller while 2 others escaped. A jet skier attempted to rescue the boy trapped in the roller. Boy drowned and jet skier survived but was in very critical condition. There was a made for TV movie about this incident called “Hero on the Fox”.

A few years back, a snowmobiler jumped the dam and broke through the ice and drowned. He stated that snowmobilers often jump the dams.

Another incident involved a man who got caught on the top of the dam.

Chief Miller believed that under low flow conditions, the risk of drowning was very minimal due to the low water depths that most people could wade in.

3) Are there any public education measures in place to promote dam safety?

No programs in place. The mother of the boy who drowned wanted to start a program for students and scouts about dam safety. However, the school system did not approve the program since they did not believe they could fit the program in the already busy schedule.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

Chief Miller believed a life buoy placed in glass would be a good safety measure.

He believed a panic button might be abused more than it would help.

0 25 50 100 Feet

1 inch equals 100 feet

North Aurora Dam - Fox River

North Aurora, Illinois

CTE | AECOM

Figure 5.3.9.2-1
North Aurora

Photo 5.3.9.2 - 1 - North Aurora Dam, Fox River
Right abutment. Stairs to water.

Photo 5.3.9.2 - 2 - North Aurora Dam, Fox River
Right bank, downstream. Portage/boat launch.

Photo 5.3.9.2 - 3 - North Aurora Dam, Fox River
Dam face, from left abutment. Note steps in dam.

Photo 5.3.9.2 - 4 - North Aurora Dam, Fox River
Upstream left bank. Intake to downstream millrace. Dangerous whirl pool. No warning sign to river users.

Photo 5.3.9.2 - 5 - North Aurora Dam, Fox River
At millrace outlet from Fox River. Strong current.

Photo 5.3.9.2 - 6 - North Aurora Dam, Fox River
Seasonal Warning Buoy at Downstream. (IDNR, 2006)

Photo 5.3.9.2 - 7 - North Aurora Dam, Fox River
Seasonal Warning Buoys at Upstream. (IDNR, 2006)

Photo 5.3.9.2 - 8 - North Aurora Dam, Fox River
Three (3) spotlights at Downstream Bridge. (IDNR, 2006)

5.3.9.3 Assessment

1) In general, the dam lacks warning signs except for the standard black and white OWR signs which are visible from only a short distance (approximately 45 feet). These signs are hard to read from the river surface and should be mounted lower to the river surface.
2) The restraint fences along both abutments are in good condition and appear to adequately restrain children.
3) Unmarked upstream and downstream portages are located on both river banks. Both right bank portages are especially close to the dam and present hazards for those attempting to use them. The left bank portages appear to be of adequate distance both upstream and downstream for safe use.
4) The millrace located well left of the left abutment has a very rapid current which might present a danger for those attempting to portage there. The millrace is fed by an upstream intake adjacent to the left bank of the river (approximately 250 feet upstream of the dam). This intake creates a hazardous vortex/whirlpool which presents a hazard to river users. The whirlpool is marked to the public from the shore, but there is no indication of the whirl pool to river traffic, except a fence structure, which might attract the attention of a curious canoeist.

5.3.10 Aurora East Dam

5.3.10.1 Existing Documentation

¶ Dam and Location:

Aurora East Dam	Aurora East IL	Fox River	Kane County

¶ Ownership
This dam is owned by the State of Illinois. (IDNR 2006)

¶ History
In 1915, a dam existed on the east channel at the head of Stolps Island. On the west channel a dam existed and the remains of a mill race, with the American Wood Working Machine Co. as one of the owners. The State Div. of Waterways issued a permit number 3579 in Nov., 1936 to the Aurora Sanitary District to construct a dam across the east channel. The State of Illinois acquired title to the river ownership on the East Channel on Jan. 15, 1937 from John and Magaretha Scheets. The State Div. of Waterways, in conjunction with Aurora Sanitary District, constructed the dam across the east channel which was completed in 1938. The dam on the west channel of Stolp's Island is rather vague in history and ownership but it is in private ownership. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

OWR Survey at Aurora East Dam. Fox River, Aurora, IL. 2006.

5.3.10.2 Visual Reconnaissance

¶ **Dam and Location:**

Aurora East Dam	Aurora East	Fox	Kane

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/10/2007; 9:30 am to 10:35 am

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
There are two dams, one in the east and one in the west channel through Aurora. This report will only examine the east dam.

No obvious visible deficiencies were noted along the dam crest or face. However, the change in roller direction adjacent to the left abutment (see Evidence of Roller, below) may indicate a structural problem at the downstream toe the dam.

The right abutment is damaged. There is an approximately 6' by 6' section of eroded concrete, undermining the abutment wall. Vegetation is growing in this area. This requires immediate maintenance. Other vertical walls upstream and downstream of dam exhibit minor surface cracking.

¶ **Evidence of Roller**
Yes, there is a very strong roller from upstream to downstream except for the nearest 30 feet from the left abutment where there appears to be a reverse roller (flow downstream below the water surface and upstream at the water surface).

¶ **Portages**
There is an unmarked, relatively steep portage/boat launch on the left upstream bank. However, this portage is downstream of the seasonal warning buoys. A downstream, upstream of the immediate upstream bridge left bank portage. The west dam was a canoe chute which may or may not be in operation, according to a paddler's website. A portage may also exist in this area, but was not observed.

There are no signs at any of the portages.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
The right and left abutments have railings of 3'6" or greater at the abutment and upstream and downstream of the dam.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
The dam has standard OWR warning signs, Photo 3.4.10.2-1 ("Warning Hazardous Currents Present DO NOT Enter Spillway Area", posted in English and Spanish) visible only to downstream river users. These signs are readable from approximately 45 feet. There were no warning signs for upstream river users. No warning buoys were noted at this visual reconnaissance, however IDNR observed five (5) seasonal warning buoys in the channel upstream of and shared by the east and west dams as shown in Figure 3.4.10.2-1 and Photo 3.4.10.2-6.

¶ **Lighting**
The right bank has small lamps illuminating plants and other objects along the bank. There is a lamp post at the left abutment. 5 spot lights illuminate the dam face from the downstream Galena Boulevard bridge.

¶ **Access (pedestrian, vehicular, emergency equipment)**
There is no vehicular access to the dam, due to the constraining sidewalks. Vertical walls and rails severely limit any pedestrian access.

¶ **EMS Interview Summary**

Interviewed Chief John Lehman with Aurora Fire Department. He has 20 years of experience with the department. He can be reached directly at 630-897-7821.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   There is an intricate response plan for the Aurora West Dam. Response to the Aurora East Dam would likely be similar. The response plan for the west dam involves use of a ridge hull inflatable boat, anchored and held perpendicular to the dam, by ropes. Ladder access from the bridge might also be attempted.

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

Chief Lehman believed that the East Dam did not have a boil. He believed that the water depth was only between 1 and 1.5 feet. He stated that the East Dam has a very low current and that people can walk right up to the face without a probe. There have not been any incidents at the Aurora East Dam.

He stated that the west dam is where incidents have occurred. There have been approximately 10 drownings at the West dam. The incidents at the west dam all involved adult victims, including local homeless people, canoeists and other random people. Only 1 person has survived falling in the dam.

3) Are there any public education measures in place to promote dam safety?

Chief Lehman was not aware of any public safety measures in place.

4) Do you Have ideas/suggestions on how to improve safety and/or prevent future deaths?

He stated that he did not believe there was a significant need for improvements in safety since the dam risk is minimal.

He believed a panic button would be abused, since there are many people around, including a large itinerant population. He believed that the high population in the area allows for an adequate response time.

A life buoy under glass would be valuable.

0 40 80 160 Feet

1 inch equals 152 feet

Aurora East Dam - Fox River

Aurora East, Illinois

CTE | AECOM

Figure 5.3.10.2-1

Aurora East

Photo 5.3.10.2 - 1 - Aurora East Dam, Fox River
Right abutment. Standard OWR warning sign.

Photo 5.3.10.2 - 2 - Aurora East Dam, Fox River
Dam face, taken from right abutment.

Photo 5.3.10.2 - 3 - Aurora East Dam, Fox River
View of dam, from upstream bridge.

Photo 5.3.10.2 - 4 - Aurora East Dam, Fox River
Left upstream bank. Boat launch/portage. Located downstream of summer warning buoys.

Photo 5.3.10.2 - 5 - Aurora East Dam, Fox River
Aurora West Dam. View of canoe/kayak chute.

Photo 5.3.10.2 - 6 - Aurora East Dam, Fox River
Seasonal Warning Buoys. (IDNR, 2006)

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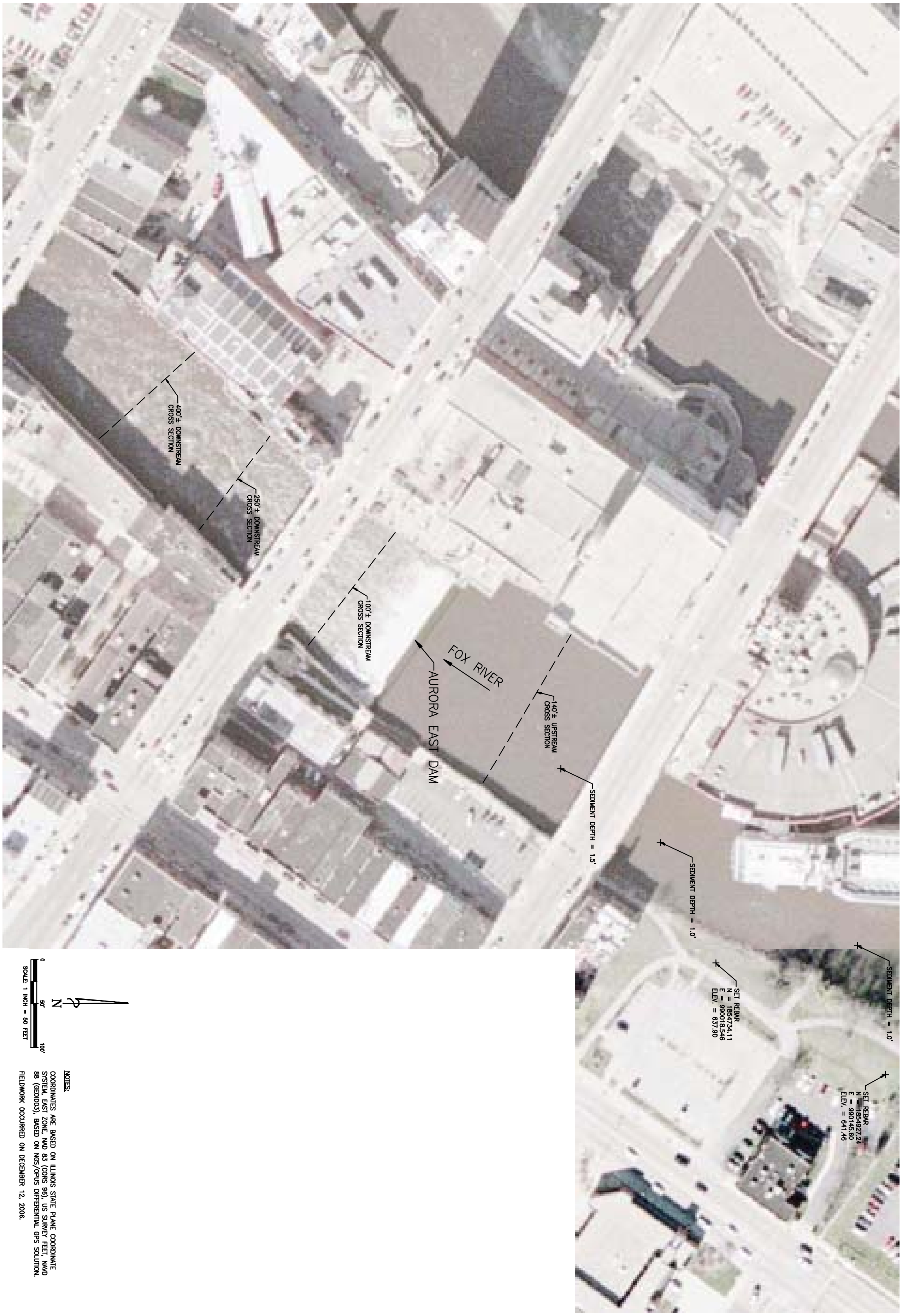

N

0 50' 100'

SCALE: 1 INCH = 50 FEET

NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON NGS/OPUS DIFFERENTIAL GPS SOLUTION.

FIELDWORK OCCURRED ON DECEMBER 12, 2006.

Designed By:	N/A
Drawn By:	NDP
Reviewed By:	ADC
Date:	18 December 2006
Project No.:	232-06058
Drawing:	2
	1 OF 2

Client:

FIGURE 5.3.10.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Sheet Title:

AURORA EAST DAM - FOX RIVER
KANE COUNTY, ILLINOIS
DAM SURVEY - PLAN VIEW

Project:

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

MAURER & STUTZ, INC.
ENGINEERS SURVEYORS
"WORKING with YOU by DESIGN"

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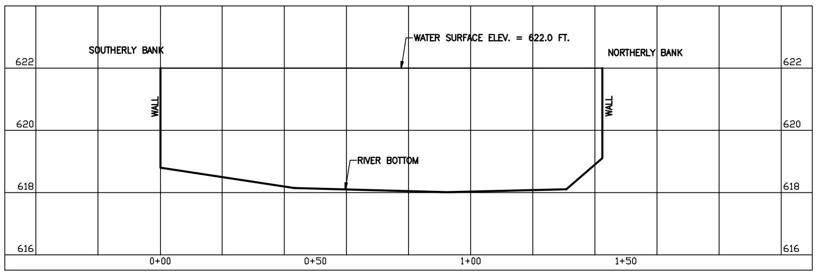
FAX (309) 647-8155

ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

REVISIONS		
No.	Date	Description



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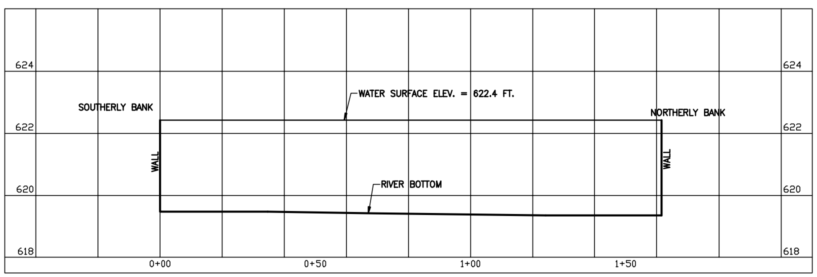
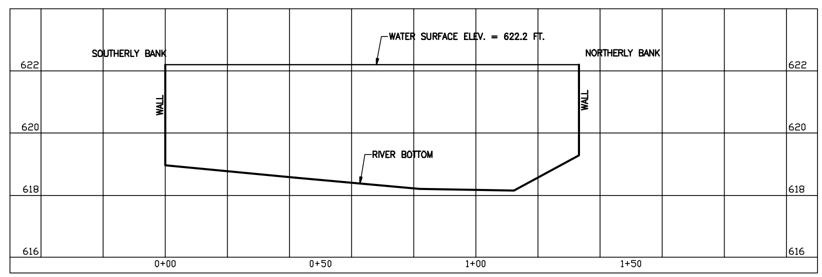
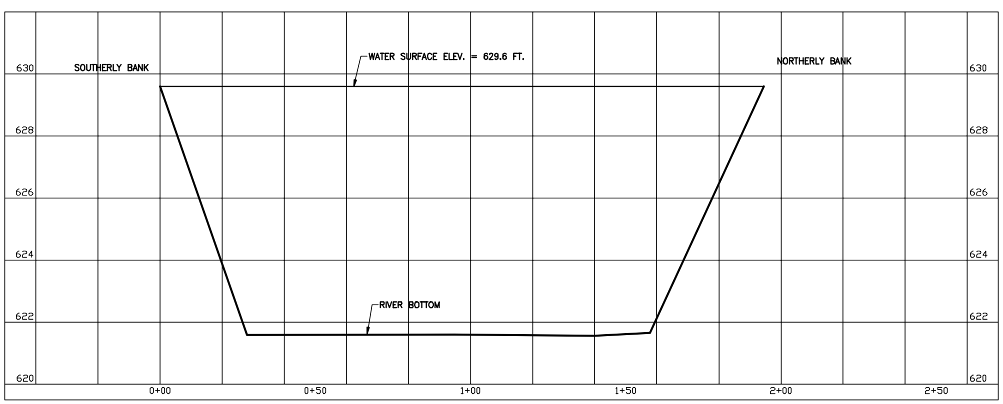


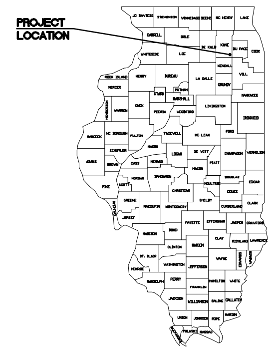
100'± DOWNSTREAM

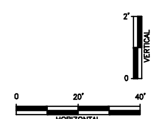


250'± DOWNSTREAM



140'± UPSTREAM





SCALES

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

REVISIONS		
No.	Date	Description

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1870 EAST ASH STREET, CANTON, ILLINOIS 61520, PH. (309) 647-7831, FAX (309) 647-6155
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

Sheet Title: **AURORA EAST DAM - FOX RIVER**
KANE COUNTY, ILLINOIS
DAM SURVEY - CROSS SECTIONS

Project: **DAM SAFETY EVALUATIONS**
STATEWIDE PROGRAM

Client: FIGURE 5.3.10.2-3
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 2
2 OF 2

S:\232\23206058\eagle point\aurora.dwg

5.3.10.3 Assessment

1) There is a portage on the left river bank upstream. It's unmarked and not apparent to river users. This portage is located downstream of the warning buoys. There was no apparent left bank downstream portage. The West dam has a canoe chute and a portage, which should be the designated route for river users heading downstream. However, no sign indicating the presence of the portage or the existing canoe chute was observed.
2) There is a lack of any warning signage of the dam to upstream river users. The fencing/railings along both banks of the river from the immediate downstream dam to the immediate upstream dam appear to be effective restraints to pedestrians.
3) The standard OWR warning signs are mounted high enough for pedestrians on each bank to see. They are mounted to high for downstream river users to see or read easily.
4) Access to the dam is severely limited by the shore restraints on both upstream and downstream banks access is also discouraged by the high retaining walls along both upstream and downstream banks.

5.3.11 Montgomery Dam

5.3.11.1 Existing Documentation

¶ **Dam and Location:**

Montgomery	Montgomery	Fox	Kane
Dam	IL	River	County

¶ **Ownership**
This dam is owned by the State of Illinois. (IDNR 2006)

¶ **History**
In 1916, an old wooden dam existed with an old mill and head race on the west side of the river. In 1967, under contract FR-165, the State started construction on the present dam which is approximately ¼ mile upstream of the old dam site. The dam was completed in 1969. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

FR 165- Montgomery Dam on Fox River, Division of Waterway, Department of Public Works, IL, February 1967

OWR Survey at Montgomery Dam, Fox River, Montgomery, IL. 2006.

5.3.11.2 Visual Reconnaissance

¶ **Dam and Location:**

Montgomery Dam	Montgomery IL	Fox River	Kane County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/10/2007; 8:15 am to 9:17 am

¶ **Approximate Flow:** 1,710 cfs (gage height: 11.88 feet)

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
The dam has three (3) steps. The horizontal and vertical alignment of the dam appears good. No obvious deficiencies were noted along the dam crest and face, although these were partially obscured by the flow over the dam. The downstream left bank exhibits heavy erosion and is in need of repair. Both concrete abutments appeared to be in relatively good condition with small minor cracks horizontal and vertical alignment good at both. USGS gaging station located on left abutment.

¶ **Evidence of Roller**
Yes, roller extends to 10 to 20 feet downstream of dam face. The roller appears to be a standard hydraulic jump with flow downstream.

¶ **Portages**
There do not appear to be any established portages. Portages on left bank are difficult due to residential areas upstream and steep slopes downstream. An upstream right bank portage area is lacking and is likely performed currently with some difficulty as the bank is fairly steep. A flatter area on the downstream right bank provides a location for easy for portage.

There are no signs at any of the portages.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
The right and left abutments have rails of 4’3” and 3’6”, respectively.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
The dam has standard OWR warning signs ("Warning Hazardous Currents Present DO NOT Enter Spillway Area", posted in English and Spanish) visible to downstream river users only. These signs are readable from approximately 45 feet. There were no warning signs for upstream river users. No warning buoys were noted at this visual reconnaissance, however IDNR observed three (3) seasonal warning buoys upstream of the dam as shown in Figure 3.4.11.2-1 and Photos 3.4.11.2-5 & 6.

¶ **Lighting**
None observed.

¶ **Access (pedestrian, vehicular, emergency equipment)**
There is a parking area on the right bank, just downstream of the dam face. The dam face is difficult to access because of steep slopes along the left bank. Pedestrian access is available to abutments and the downstream and upstream right bank. Vehicles could potentially access the pedestrian/bike on path on left bank. Vehicle access on right abutment upstream & downstream is very good.

¶ **EMS Interview Summary**

Interviewed Chief Meyers with Montgomery Fire Department. He has been with the department since 1982. He can be reached directly at 630-897-0622.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   Yes, there is a plan for water rescues. Montgomery Fire Department has 2 John Boats at their station. These are standard bots. Aurora Fire Department has a dive team that is dispatched immediately. Rescue would initially be made from the west but could also be made using the path to the east.

   Chief Meyers estimated a response time of 3 minutes, to be on the scene. An ambulance would arrive first. It would take longer to get the boats in the water.

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   No bodies have been pulled from this dam during the Chief's time with the department. He stated that the dam is a step dam and was uncertain of the drowning risk, but has been under the impression that the drowning risk was lower because of the steps. He believed that there may be a deeper area just downstream of the dam. He stated that the main recreational activity is fishing, which is quite popular. There is also some canoeing.

3) Are there any public education measures in place to promote dam safety?

Chief Meyers was not aware of any public safety measures.

4) Do you Have ideas/suggestions on how to improve safety and/or prevent future deaths?

Warning signs should be placed upstream of the dam. Upstream buoys would be quite helpful.

Better warning signs should be placed on the banks.

Spanish and English signage would be best.

0 25 50 100 Feet

1 inch equals 100 feet

Montgomery Dam - Fox River

Montgomery, Illinois

CTE | AECOM

Figure 5.3.11.2-1

Montgomery

Photo 5.3.11.2 - 1 - Montgomery Dam, Fox River
Dam face, from left abutment.

Photo 5.3.11.2 - 2 - Montgomery Dam, Fox River
View of dam, from upstream left bank.

Photo 5.3.11.2 - 3 - Montgomery Dam, Fox River
Right abutment and dam face. Standard OWR warning sign.

Photo 5.3.11.2 - 4 - Montgomery Dam, Fox River
Right bank, just downstream of dam. Note erosion.

Photo 5.3.11.2 - 5 - Montgomery Dam, Fox River
Seasonal Warning Buoys. (IDNR, 2006)

Photo 5.3.11.2 - 6 - Montgomery Dam, Fox River
Seasonal Warning Buoys. (IDNR, 2006)

5.3.11.3 Assessment

1) There is a lack of any warning signage to upstream river users during the winter months. Buoys are in place from March until early November. Standard OWR warning signs posted at both abutments are only visible to downstream river users and pedestrians.
2) There do not appear to be any established portages. These are placed 15-20 feet above the water surface and would be difficult for boaters to see and are readable from 45 feet away.
3) There is good vehicular access to both dam abutments.
4) The railing/fencing along both abutments appear to be effective restraints for pedestrians.

5.3.12 Yorkville Dam

5.3.12.1 Existing Documentation

¶ Dam and Location:

Yorkville/Glen Palmer	Yorkville	Fox	Kendall
Dam	IL	River	County

¶ Ownership
This dam is owned by the State of Illinois. (IDNR 2006)

¶ History
The original dam at Yorkville was constructed by Titus Howe prior to 1842 and was utilized to furnish power for operating a grist mill. Its last private owners, the Public Service Company of Northern Illinois, deeded the property free of charge to the State of Illinois along with the Oswego and Millhurst dams owned by the Public Service Company of Northern Illinois. The State - Div. of Waterways under contract FR-121, 1960-61 constructed the present dam. This dam is also called the Glen D. Palmer Dam named after a former Director of Conservation. Cost of the dam was $310,000 and included provisions for a future lock along the north shore. The dam is currently undergoing reconstruction to minimize safety hazards. Construction of Phase 1
- Stepped Spillway and Auxiliary Improvements (FR-422) began in May 2006 at a cost of $2,733,737.28. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

Yorkville/Glen Palmer Dam Alternative Analysis and Preliminary Design Project OWR-02-003, IDNR 2003.

FR 295 - Yorkville Dam, Riprap Fill, Department of Water Resources, IDOT, 1977.

Yorkville/ Glen Palmer Dam Alternative Analyses and Preliminary Design Report, IDNR, December 2003.

FR 422 - Multi Purpose Dam Project, Phase I, Stepped Spillway and Auxiliary Improvements, Yorkville Dam, Office of Water Resources, IDNR, 2005.

OWR Survey at Yorkville Dam, Fox River, Yorkville, IL. 2006.

5.3.12.2 Visual Reconnaissance

¶ **Dam and Location:**

Yorkville/Glen Palmer Dam	Yorkville	Fox	Kendall

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Daniel Tornil
Company: CTE Engineers

¶ **Date & Time:** 1/11/2007; 12:30 pm to 2:00 pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
The dam is currently under construction. Four (4) additional steps are being added to the existing structure. A fish ladder is being added to river-right and a canoe chute will replace the leftmost portion of the dam. No visible defects were observed. Large riprap was observed in the channel. This riprap had been previously placed in the scour hole to attempt improve dam safety.

¶ **Evidence of Roller**
Yes, reverse roller (flow downstream under water and upstream at water surface) in existing dam (left side) appears very severe extending 10-20 feet, however, elevated flow was present due to the closing of a portion of the dam to enable construction. It was uncertain whether a roller existed in the newly upgraded portion of the dam (river-right), rather this appeared to be a hydraulic jump flowing downstream only. Jump extended about 20 feet.

¶ **Portages**
The left bank has an upstream portage with a path leading from a forest preserve. This portage is unmarked. Further downstream, near the dam, there is an unauthorized boat launch which is accompanied by a sign stating “Restricted area. No entry”. Downstream of the dam, on river-left, there is a public portage which is accessible by a stairway.

No portages were observed on the right bank.

There are no signs at any of the portages.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
The right and left abutments each have 4' rails. The downstream left bank has a 3' rail from the abutment to the extents of the park.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
The dam has standard OWR warning signs ("Warning Hazardous Currents Present DO NOT Enter Spillway Area" posted in English and Spanish) visible to downstream river users and pedestrians. These signs are readable from approximately 45 feet. Additional warning signs are placed in the vicinity of the dam stating "Restricted Entry. No Entry." There were no warning signs for upstream river users. No warning buoys were noted at this visual reconnaissance, however IDNR observed fifteen (15) seasonal warning buoys upstream of the dam as shown in Figure 3.4.12.2-1 and Photos 3.4.12.2-10 thru 12.

¶ **Lighting**
Lamp posts are present in park on the downstream left bank. The upstream and downstream right bank and the dam face are un-lit.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Left bank has vehicular access to the adjacent parking lot and potentially to the dam face. Pedestrian access is available to the dam face by means of the portage/stairway downstream of the dam face. Vehicular access to the right abutment and upstream and downstream banks is not possible due to the steep slopes.

After construction, right bank will be mainly inaccessible since it will be thick forest and private residential area.

¶ **EMS Interview Summary**
Written response from Chief Michael Hitzemann of the Bristol-Kendall, Fire Department.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   A response plan exists. The first unit should be at the dam within 3-4 minutes.

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   Many Incidents. The Kendall County Record has kept a running count.

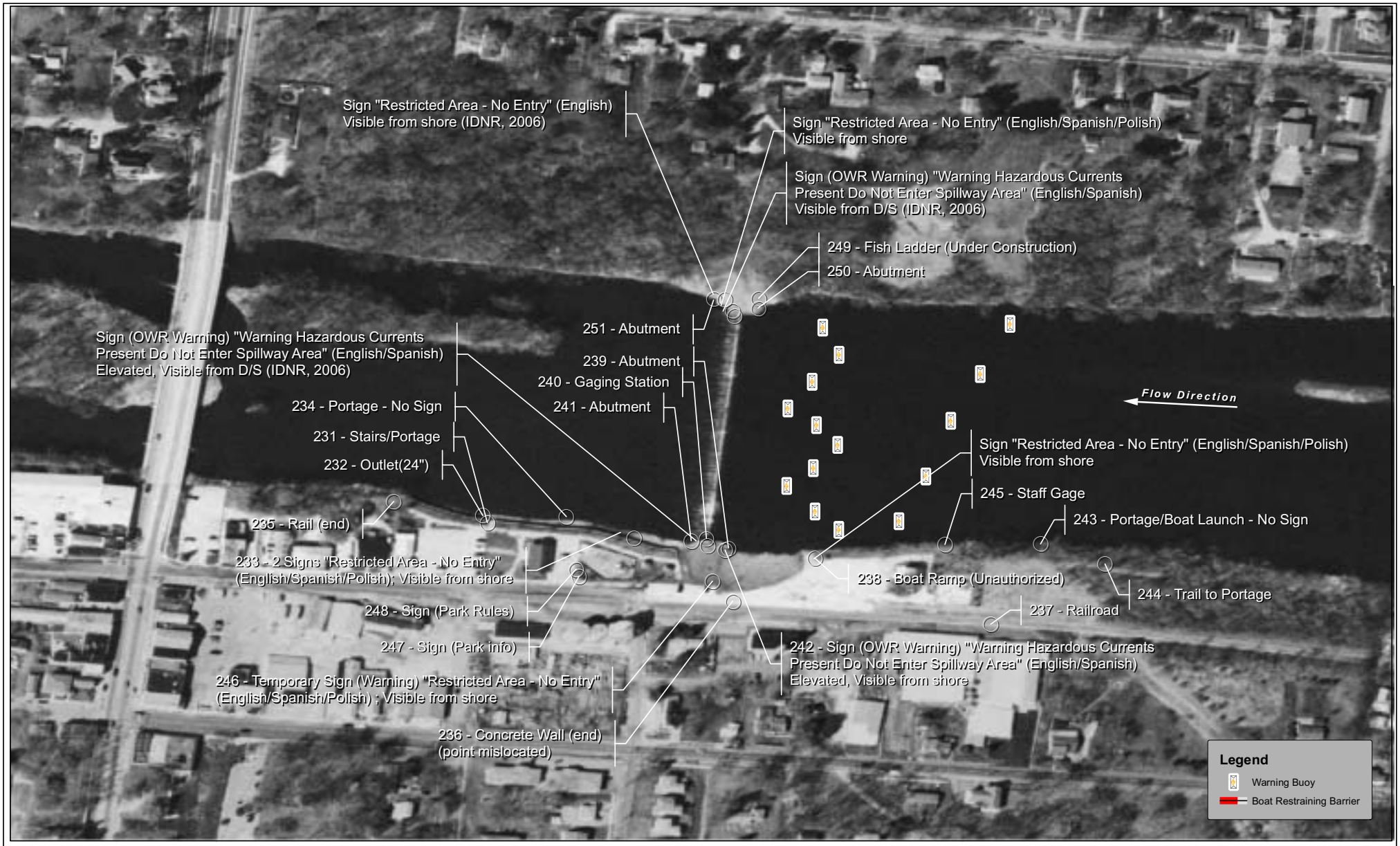
3) Are there any public education measures in place to promote dam safety?

Signage.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

The Dam is currently being improved. This should make the dam much safer.

Additionally, interviewed Alan Grelck of IDNR-OWR, construction manager for the site. Alan stated that the hole beneath the roller was 7 to 8 feet in depth and upto 10 feet in depth (as observed during construction). Riprap was placed below the dam in 1977. Riprap gradually was pushed downstream from the edge of the dam and the hold below the dam re-emerged. Grelck also stated that canoeing mostly occur U/S and fishing D/S. Although it is illegal to approach the dam from the U/S or the D/S, people are routinely seen in the vicinity of the dam. Grelck also described how he observed Yorkville police writing as many as 10 tickets in one day to fishermen too close to the dam.



0 50 100 200
Feet
1 inch equals 200 feet

Yorkville Dam - Fox River

Yorkville, Illinois

CTE | AECOM

Figure 5.3.12.2-1
Yorkville

Photo 5.3.12.2 - 1 - Yorkville Dam, Fox River
Left downstream. Stairs/portage.

Photo 5.3.12.2 - 2 - Yorkville Dam, Fox River
Dam face from left abutment. Note large roller. Under construction.

Photo 5.3.12.2 - 3 - Yorkville Dam, Fox River
Left bank at dam face. Standard OWR signage.

Photo 5.3.12.2 - 4 - Yorkville Dam, Fox River
Left bank, upstream portage.

Photo 5.3.12.2 - 5 - Yorkville Dam, Fox River
Left abutment. Memorial to 17 drowning victims.

Photo 5.3.12.2 - 6 - Yorkville Dam, Fox River
Left bank pavilion. Potential location for educational kiosk.

Photo 5.3.12.2 - 7 - Yorkville Dam, Fox River
Right abutment. Newly added steps to dam.

Photo 5.3.12.2 - 8 - Yorkville Dam, Fox River
Right Abutment, Note Warning Signage. (IDNR, 2006)

Photo 5.3.12.2 - 9 - Yorkville Dam, Fox River
Right Abutment and Warning Signs (IDNR, 2006)

Photo 5.3.12.2 - 10 - Yorkville Dam, Fox River
Seasonal Warning Buoys. (IDNR, 2006)

Photo 5.3.12.2 - 11 - Yorkville Dam, Fox River
Seasonal Warning Buoys. (IDNR, 2006)

Photo 5.3.12.2 - 12 - Yorkville Dam, Fox River
Seasonal Warning Buoys. (IDNR, 2006)

5.3.12.3 Assessment

1) This dam is currently being redesigned to have 3 additional steps and a canoe chute on the left hand side. Whether the roller will be eliminated is uncertain, but it will likely be significantly improved from its previous state.
2) While there are multiple signs warning of the danger, the signs are small and not specific to the exact danger posed by the dam.
3) There is a large amount of recreation use in this area.
4) Although there are portages on the public/river left side, these portages are un-marked.

5.4 DesPlaines River Dam

5.4.1 Hofmann Dam

5.4.1.1 Existing Documentation

¶ **Dam and Location:**

Hofmann	Riverside	Des Plaines	Cook
Dam	IL	River	County

¶ **Ownership**
The dam is owned by the State of Illinois. (IDNR 2006)

¶ **History**
In 1907-1908 George Hofmann built a dam at this location as part of an amusement park. The current dam was constructed in 1950. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

FR 88 - Proposed Hoffman Dam in Des Plaines River, Department of Public Works and Buildings, Division of Waterways, Cook County, Illinois, 1950.

FR 223 - Channel Improvements, Hoffman Dam, Cook County, Division of Water Resources Management, IDOT, June 1972.

FR 322 - Retaining Wall on Des Plaines River, Hoffman Dam at Lyons, Division of Water Resources Management, IDOT, June 1983.

Hoffman Dam Stream Bank and Channel Stabilization Following Dam Removal, Parsons Engineering Science, Inc. and US Corps of Engineers, Jan 2002.

Detailed Project Report, Dam Removal Stability Analysis and Recommendations, Appendix C, U.S. Army Corps of Engineers, Chicago District Geotechnical Section, December 2005.

Des Plaines River Dams, Department of Public Works and Buildings, Division of Waterways, Cook County, IL, 1942.

Hoffman Dam Section 206, Ecosystem Restoration, US Corps of Engineers and IDNR, May 2006.

Preliminary Design Report of Des Plaines River Restoration, Parsons Engineering Science, Inc. and US Corps of Engineers, Jan 2002.

5.4.1.2 Visual Reconnaissance

¶ **Dam and Location:**

Hofmann Dam	Riverside IL	Des Plaines River	Cook County

¶ **Inspectors:**

Name: Nick Textor
Company: CTE Engineers

Name: Karen Kabbes
Company: Kabbes Engineering

¶ **Date & Time:** 12/9/2006; 9:30 am to 12:00 pm; 2/3/2007; 3 pm to 4 pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete

¶ **General Dam & River Bank Condition**
The dam had no obvious visible deficiencies. Horizontal and vertical alignment of the dam crest and face is good. Debris consisting of logs and branches was observed in the middle of the dam crest. Embankments have vertical wall with rails and otherwise have minor erosion along left and right upstream and downstream banks Horizontal and vertical alignment of both abutments is good.

¶ **Evidence of Roller**
Yes, strong reverse roller extending to approximately 15 feet downstream of dam face.

¶ **Portages**
Portages are not apparent and are unmarked. Portage likely on left bank just upstream of historic mill structure. Portage difficult due to trees and medium forest. Multiple portage locations downstream of dam. Uncertain whether canoeists would portage downstream of the secondary dam. This is quite a long trek.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints**
Hofmann Tower abuts dam on right bank. Fence around tower and along bank upstream and downstream. Left bank has vertical wall and railing upstream and downstream of the dam.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
A single warning sign on Hofmann Tower warns river users "Danger Dam Ahead". This sign is readable to upstream boaters a possibly 30 feet. However, this sign may easily be missed and is a bit faded and not large enough. Other signage included warnings against picnicking and fishing at points near to the dam. No warning buoys were noted at this visual reconnaissance, however IDNR noted four (4) seasonal buoys upstream of the dam as shown on Figure 3.5.1.2-1 and Photo 3.5.1.2-5.

¶ **Lighting**
Uncertain.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Vehicular access to left abutment. Right abutment has limited access due to Hofmann Tower. Pedestrian and vehicular access upstream and downstream, however access limited by rails. Further downstream is pedestrian access only in forest preserve.

¶ **EMS Interview Summary**

Response by email from Kevin Mulligan, Fire Chief, Riverside Fire Department.

1) Do you have an Emergency plan for potential drowning incidents at this dam? Can you estimate a response time?

   "We do have a written response plan. The response time can vary anywhere between one minute to six minutes depending on the resource needed. First responders and Paramedics can be on scene in less than two minutes most times. A boat and other specialized rescue equipment will take slightly longer to arrive."

2) Do you know of any deaths/accidents at this dam? Please describe the nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   "Yes, there have been deaths and accidents at the Dam. I can recall a number of accidents, although I do not know the details of the month and year. In 23 years, there have been at least 6 incidents which resulted in a death. There have been more incidents, but death did not take place."

3) Are there any public education measures in place to promote dam safety?

   "Last year the IDNR installed floating buoys to warn users of the River of the Dam."

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   "Removal of the Dam is one solution. Another is the permanent installation of the floating buoys every year. A third idea would be signs up river warning of approaching a Dam."

0 25 50 100 Feet

1 inch equals 100 feet

Hofmann Dam - Des Plaines River

Riverside, Illinois

CTE | AECOM

Figure 5.4.1.2-1

Hofmann

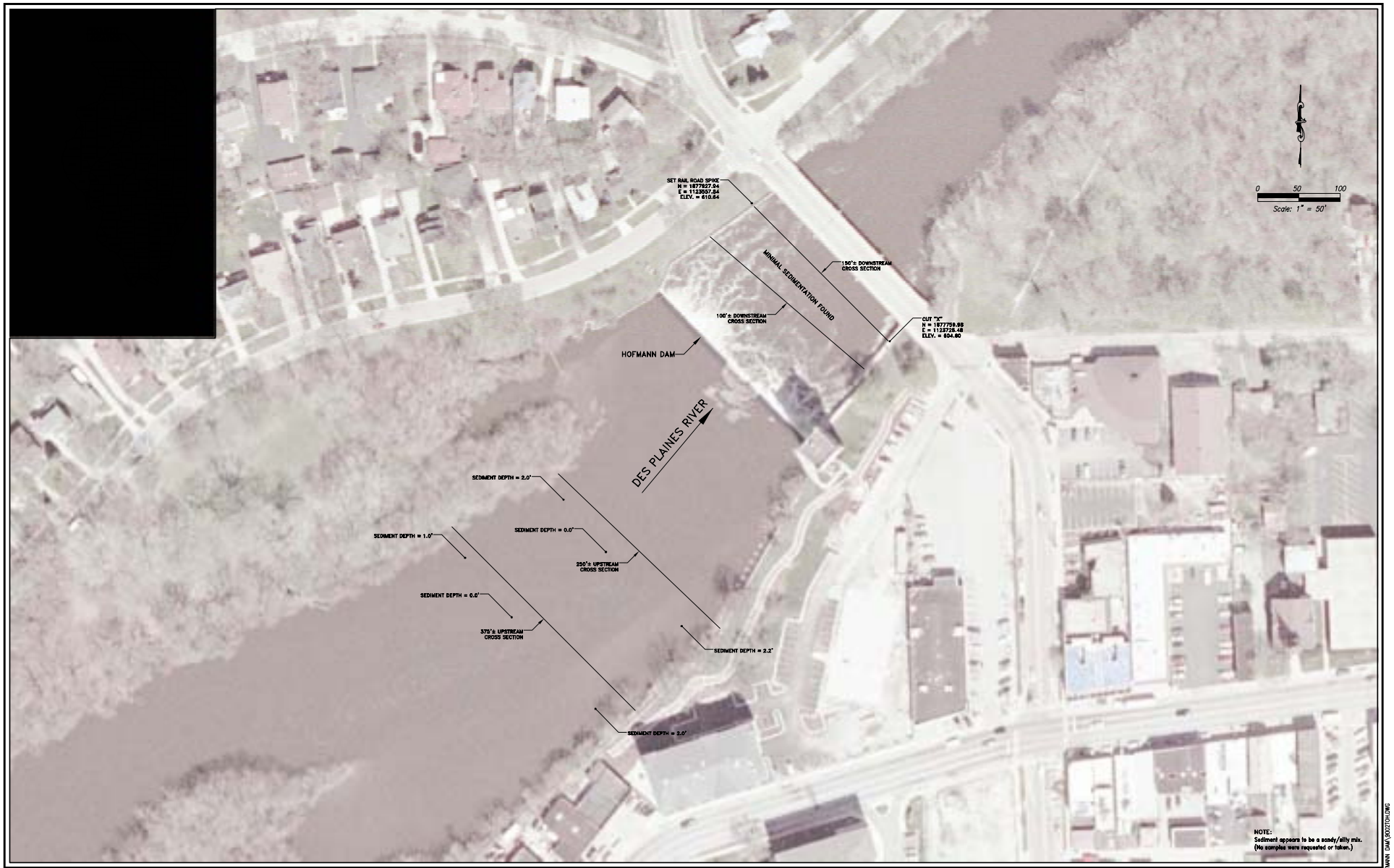
Photo 5.4.1.2 - 1 - Hofmann Dam, Des Plaines River
Dam face, taken from right abutment. Note roller.

Photo 5.4.1.2 - 2 - Hofmann Dam, Des Plaines River
Downstream. Additional dam structure downstream of Hofmann dam.

Photo 5.4.1.2 - 3 - Hofmann Dam, Des Plaines River
Downstream left bank. Village warning sign.

Photo 5.4.1.2 - 4 - Hofmann Dam, Des Plaines River
Bridge downstream of dam. Village warning sign.

Photo 5.4.1.2 - 5 - Hofmann Dam, Des Plaines River
Seasonal Warning Buoys. (IDNR, 2006)



DLZ
DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, INDIANA 46304
TELEPHONE (219) 764-4700 FAX (219) 764-4156

Figure 5.4.1.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

RIVERSIDE ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

HOFFMANN DAM – DES PLAINES RIVER
DAM SURVEY – PLAN VIEW

DRAWN: MRR	CHK'D: KDS
DESIGNED: –	APPRV'D: KSS
DATE: 02 February 2007	
SCALE: 1" = 50'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

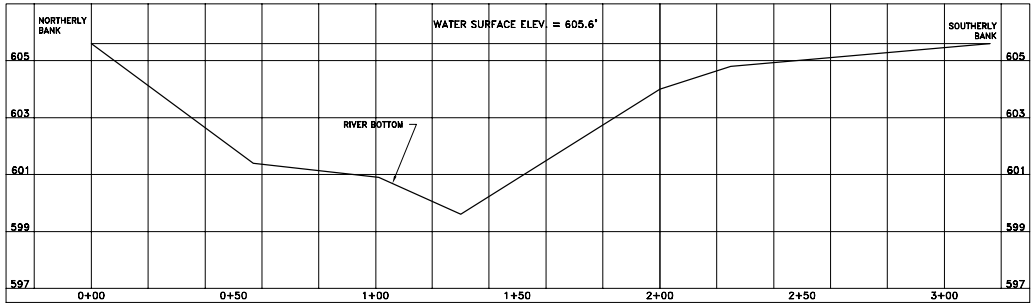
NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03).

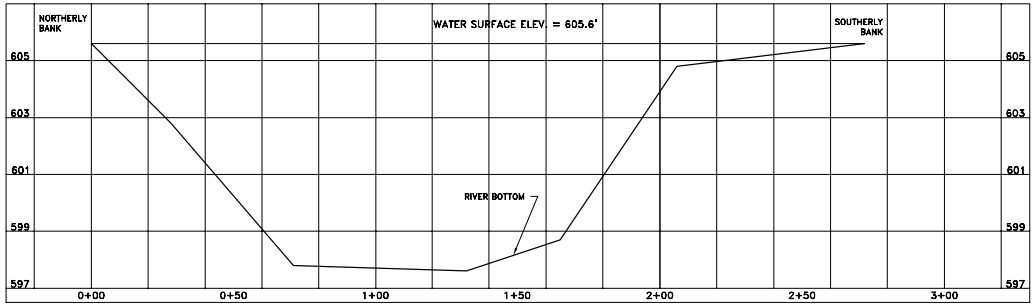
FIELDWORK OCCURED ON JANUARY 25, 2007

SHEET 1
OF 2
DRAWING NUMBER
9002TOH

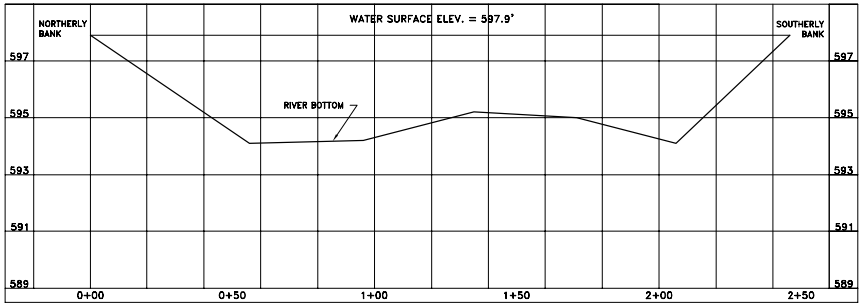
M:\PROJ\0750\9002\TOPO\HOFMANN DAM\9002TOH.DWG



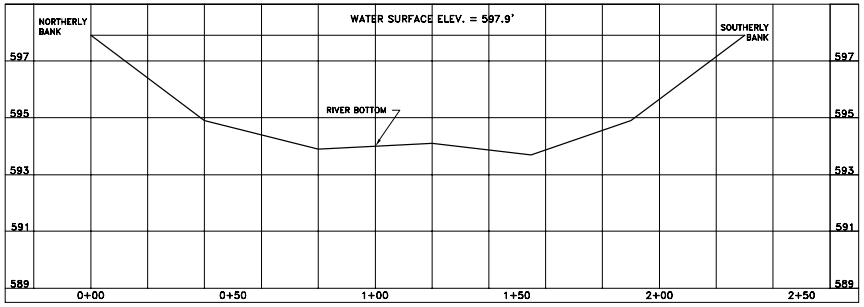
375'± UPSTREAM



250'± UPSTREAM



100'± DOWNSTREAM



150'± DOWNSTREAM

DLZ
DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, INDIANA 46304
TELEPHONE (219) 764-4700 FAX (219) 764-4156

Figure 5.4.1.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

RIVERSIDE ILLINOIS

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

HOFFMANN DAM – DES PLAINES RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: MRR	CHK'D. KDS
DESIGNED: –	APPRV'D: KSS
DATE: 02 February 2007	
HORIZONTAL SCALE: 1" = 20'	
VERTICAL SCALE: 1" = 2'	
PROJECT NUMBER	0750 – 9002

NO.	REVISION	BY	DATE

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

FIELDWORK OCCURED ON JANUARY 25, 2007

SHEET 2
OF 2

DRAWING NUMBER
9002TOH

M:\PROJ\0750\9002\TOPO\HOFFMANN DAM\9002TOH.DWG

5.4.1.3 Assessment

1) There is a lack of warning signage to upstream river users .One small sign says "Danger Dam" but is not large enough or prominent enough to warn of the dam it is also located at the dam crest.
2) The railing/fencing extending downstream from the dam crest to the immediate downstream bridge on both banks appears to adequately restrict pedestrians.
3) The railing/fencing that extends upstream from the dam on both banks appears to adequately restrict pedestrians.
4) There is a substantial amount of log debris along the center portion of the dam.
5) There are currently posted DO NO FISH SIGNS along the immediate downstream bridge.

5.5 Vermillion River Dam

5.5.1 Danville Dam

5.5.1.1 Existing Documentation

¶ Dam and Location:

Danville/Vermillion River Dam	Danville IL	Vermillion River	Vermillion County

¶ Ownership
This dam is owned by the City of Danville. (IDNR 2006)

¶ History
The dam was built in 1914 by the Danville Street Railway and all riparian property was deed to the City of Danville. (IDNR 2006)

¶ Available Documents
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

OWR Survey at Danville Dam, Vermillion River, Danville, IL. 2006.

5.5.1.2 Visual Reconnaissance

¶ **Dam and Location:**

Danville/Vermillion River Dam	Danville IL	Vermillion River	Vermillion County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: John Hood
Company: Kabbes Engineering

¶ **Date & Time:** 1/20/07, 2:30pm to 4:30pm

¶ **Approximate Flow:** Not determined. High flows at time of inspection.

¶ **Standard Photo Set/Video:** Complete.

¶ **General Dam & River Bank Condition**
Spillway conditions could not be determined due to high flow. Abutments on left bank pulling away from dam. Significant erosion along right bank downstream of dam. Severe erosion of left bank immediately downstream of dam.

¶ **Evidence of Roller**
Significant roller observed.

¶ **Portages**
None observed.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints/Access Limits**
Fence located along left top of bank. Access road to left bank has barricade. Access road to right bank has locked gate.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
Warning signs located on left and right abutment piers of S. Gilbert Road. Two (2) warning buoys located downstream of S. Gilbert Road about 1400 ft. upstream on the dam were noted at this visual reconnaissance as shown on Figure 3.6.1.2-1 and Photo 3.6.1.2-10.

¶ **Lighting**
None observed.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Access road to left bank located upstream of dam near S. Gilbert Road, but no direct access to dam was apparent. Slightly worn paths also noted down steep left embankment in vicinity of dam. Access road to right bank through private property. Partial steps located on left bank just upstream of dam.

¶ **EMS Interview Summary**

Interview with:

Bobby Lillard Jr
Deputy Director
Danville Fire Department
217.431.2350

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   "The City of Danville's emergency response plan for potential drowning incidents at our dams involves our fire department rescue personnel and the Vermilion County Sheriff's Dive Team. Other involved agencies include Vermilion County EMA and Medix Ambulance. Initial response time for the first arriving Fire Department Unit is generally less than three minutes after dispatch. "

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   "On 7/07/2003, three females were rescued from the Vermilion River just east of Memorial Bridge on South Gilbert. One individual managed to get to the river bank on her own and called for help. Two were pulled from the river by emergency personnel on the scene. Various agencies mentioned above assisted with the mitigation of the incident. A fourth individual drowned and was later found down river."

3) Are there any public education measures in place to promote dam safety?

   "There is limited education on dam safety for the public."

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   "Efforts in this area could be more aggressive. Dam safety is often overlooked."

0 50 100 200 Feet

1 inch equals 200 feet

Danville Dam - Vermillion River

Danville, Illinois

CTE | AECOM

Figure 5.5.1.2-1

Danville

Photo 5.5.1.2 – 1 – Danville Dam, Vermillion River
Steep left embankment where partial steps are located.

Photo 5.5.1.2 – 2 – Danville Dam, Vermillion River
Dam spillway with roller

Photo 5.5.1.2 – 3 – Danville Dam, Vermillion River
Severe erosion located just downstream of dam on left bank

Photo 5.5.1.2 – 4 – Danville Dam, Vermillion River
Downstream of dam. Significant erosion on right bank

Photo 5.5.1.2 – 5 – Danville Dam, Vermillion River
Dam Roller

Photo 5.5.1.2 – 6 – Danville Dam, Vermillion River
Dam Roller

Photo 5.5.1.2 – 7 – Danville Dam, Vermillion River
Erosion on downstream left bank at dam abutment

Photo 5.5.1.2 – 8 – Danville Dam, Vermillion River
30+' high, steep, broken glass strewn left bank

Photo 5.5.1.2 – 9 – Danville Dam, Vermillion River
Rope strap system for accessing left bank

Photo 5.5.1.2 – 10 – Danville Dam, Vermillion River
Buoys downstream of highway bridge, upstream of dam
Note: warning signage found on bridge piers.

Photo 5.5.1.2 – 11 – Danville Dam, Vermillion River
Potential sand bar takeout location on right bank upstream of dam

Photo 5.5.1.2 – 12 – Danville Dam, Vermillion River
Right bank downstream of dam

Photo 5.5.1.2 – 13 – Danville Dam, Vermillion River
Dam from downstream right bank

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DLZ INDUSTRIAL, LLC
316 TECH DRIVE, BURNS HARBOR, INDIANA 46304
TELEPHONE (219) 764-4700 FAX (219) 764-4156

Figure 5.5.1.2-2
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

DANVILLE ILLINOIS
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

DANVILLE DAM – VERMILLION RIVER
DAM SURVEY – PLAN VIEW

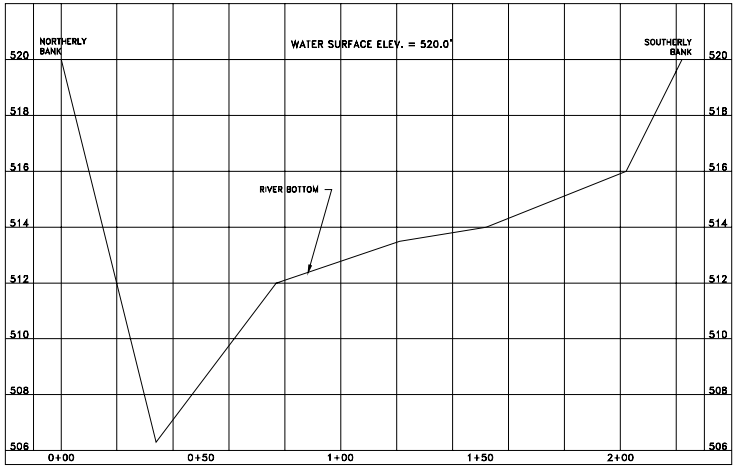
DRAWN: MRR CHK'D. KDS
DESIGNED: – APPRV'D: KSS
DATE: 08 February 2007
SCALE: 1" = 50'
PROJECT NUMBER
0750 – 9002

NO.	REVISION	BY	DATE

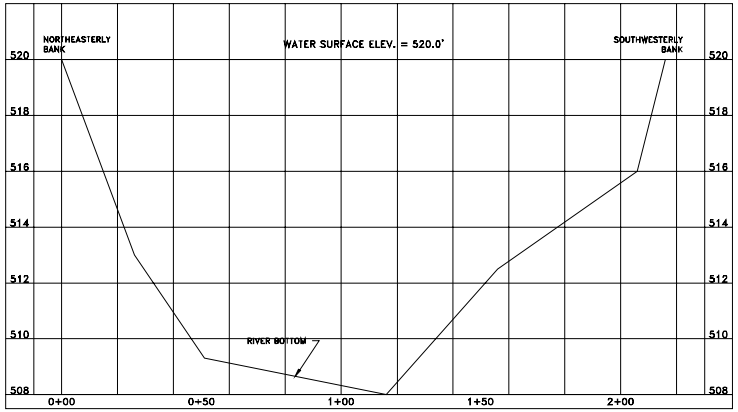
NOTES:
COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, EAST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON WGS/OPUS DIFFERENTIAL GPS SOLUTION.
FIELDWORK OCCURED ON JANUARY 26 , 2007

SHEET 1
OF 2
DRAWING NUMBER
9002TOD

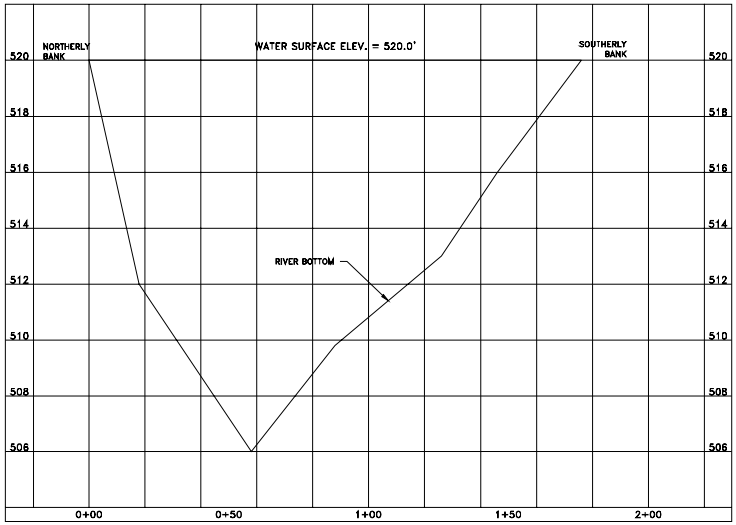
M:\PROJ\0750\9002\TOPO\DANVILLE DAM\9002TOD.DWG



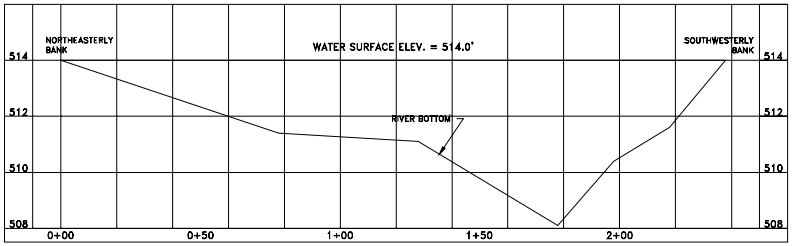
495'± UPSTREAM



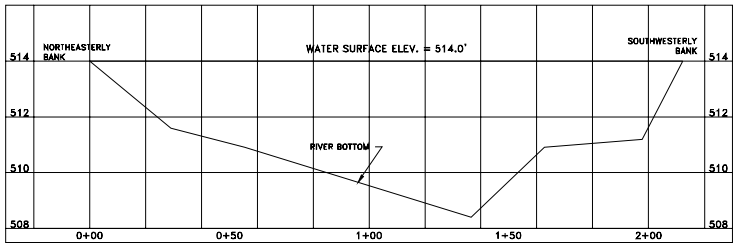
220'± UPSTREAM



365'± UPSTREAM



95'± DOWNSTREAM



140'± DOWNSTREAM

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Figure 5.5.1.2-3
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

DANVILLE ILLINOIS
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

DANVILLE DAM – VERMILLION RIVER
DAM SURVEY – CROSS SECTIONS

DRAWN: MRR	CHK'D: KDS
DESIGNED: –	APPRV'D: KSS
DATE: 08 February 2007	
HORIZONTAL SCALE: 1" = 20'	
VERTICAL SCALE: 1" = 2'	
PROJECT NUMBER	
0750 – 9002	

NO.	REVISION	BY	DATE
1	Change Elevations	KDS	5/29/07

NOTES:
ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.
CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).
FIELDWORK OCCURED ON JANUARY 26, 2007

SHEET 2
OF 2
DRAWING NUMBER
9002TOD

W:\PROJECTS\9002\TOD\DANVILLE DAM 9002TOD.DWG

5.5.1.3 Assessment

1) Lack of signage upstream; while there are buoys in the water under the bridge that warn of the dam, they could be missed and the signs painted on the bridge abutment are parallel to boaters and may not be seen unless boaters think to look.
2) Lack of portage information. There is no portage information at the dam and the left bank is too steep and does not provide for a portage location that canoeists can become trapped on the upstream left bank. Right bank is private property but could allow for portage.
3) The left bank is very steep, eroding and full of broken glass. It is so steep that users have a rope/strap system to transverse part of the bank. Fencing should be installed at the top of bank to keep people from attempting to traverse the bank.

5.6 Sangamon River Dams

5.6.1 Riverside (Carpenter) Park Dam

5.6.1.1 Existing Documentation

¶ **Dam and Location:**

Riverside Dam	Springfield IL	Sangamon River	Sangamon County

¶ **Ownership**
The ownership of this dam is unavailable. (IDNR 2006)

¶ **History**
The history of the dam is not available. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

5.6.1.2 Visual Reconnaissance

¶ **Dam and Location:**

Riverside Dam	Springfield IL	Sangamon River	Sangamon County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name: John Hood
Company: Kabbes Engineering

¶ **Date & Time:** 1/20/07 Noon to 1:30 pm Re-inspected 1/26/07 10:00 am to 1:00 pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete.

¶ **General Dam & River Bank Condition**
Left side of dam is missing or has been breached. Owner of Riverside Stables (attempted right bank access location), who also rents canoes, said the dam was blown up by the City when a new water supply for Springfield was built. First inspection was attempted but river was out of bank and left and right access roads were flooded. Site was re-inspected on January 26 from left bank access road. Bypass channel is eroding left bank, including the high left bank downstream of the dam, which appears to be a potentially serious erosion problem.

¶ **Evidence of Roller**
No, water was bypassing remaining section of spillway and not going over dam structure.

¶ **Portages**
No need to portage; breach appeared large enough to safely canoe.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints/Access Limits**
None observed.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
None observed.

¶ **Lighting**
None observed.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Access to the left bank is through the Color Plant property. Vehicular access via earthen roadway from Color Plant leads to boat ramp upstream of dam. Access to the right bank was through Springfield Park District property, but there was no direct path or roadway leading to the dam.

¶ **EMS Interview Summary**

Called Sangamon County Rescue Squad they said call City FD
Called Springfield FD
Fire Safety Division
Office of the City Fire Marshal
Room 315 Municipal Center West
300 S. Seventh St.
Springfield, IL 62701
217.789.2170

Talked to Rick Weber. Gave questions – he said he'd have somebody call. Might be Deputy Chief Reside who is in charge of special services. Division Chief Kevin Switzer called back.

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   They have a Sangamon River plan that does not specifically address the dam. (The dam is breached.) They can be on the scene within 4-6 minutes and can have divers and equipment on the scene in 15-20 minutes. They use Sangamon County Rescue Squad for backup. Their divers have had swift water training in conjunction with Sangamon County Rescue.

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   None.

3) Are there any public education measures in place to promote dam safety?

   None.

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   Education is always important.

0 50 100 200 Feet

1 inch equals 200 feet

Riverside (Carpenter) Park Dam - Sangamon River

Springfield, Illinois

CTE | AECOM

Figure 5.6.1.2-1

Riverside

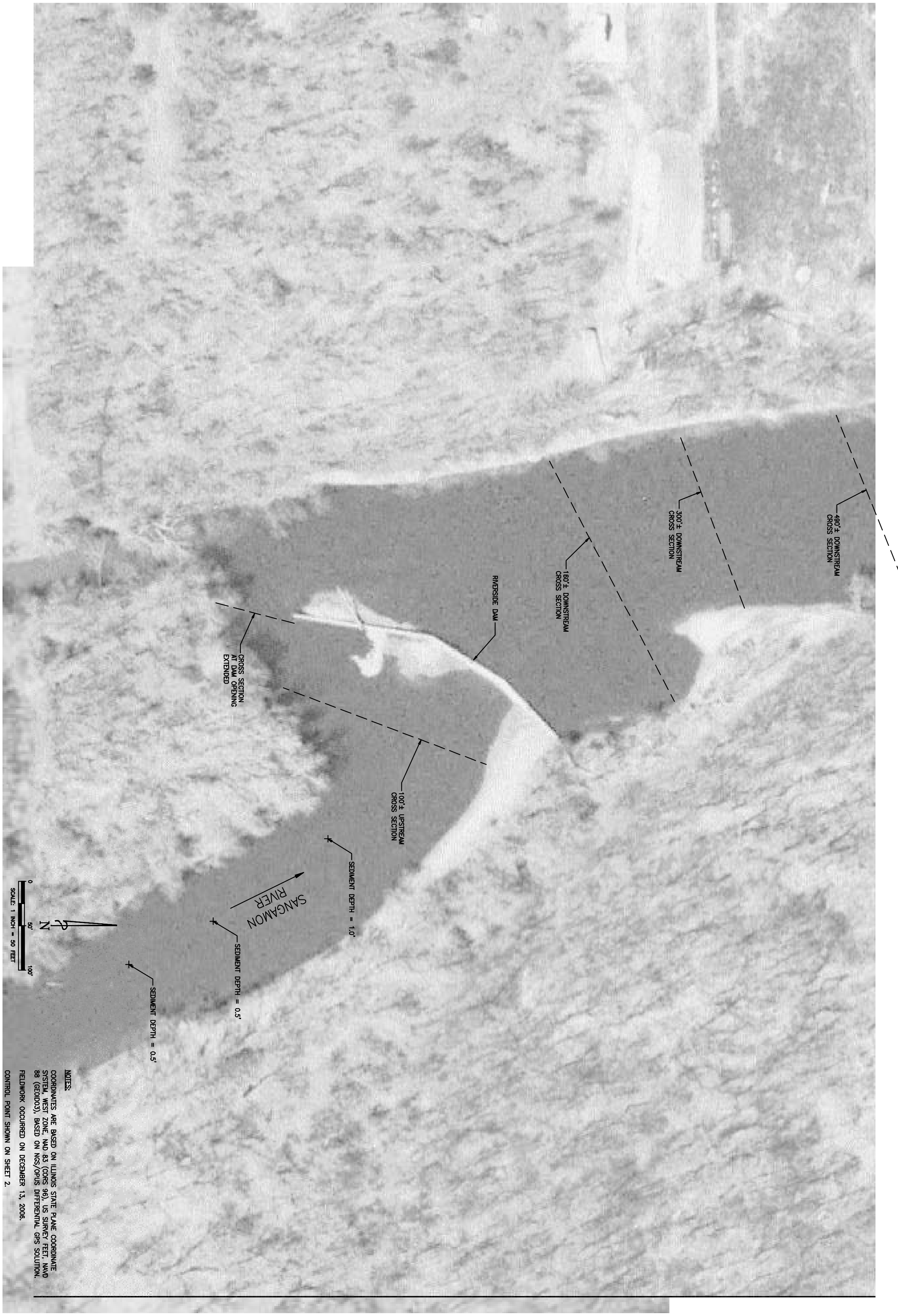
Photo 5.6.1.2 - 1 - Riverside Park Dam, Sangamon River
Looking downstream at missing dam segment.

Photo 5.6.1.2 - 2 - Riverside Park Dam, Sangamon River
Looking downstream at right dam segment, submerged.

Photo 5.6.1.2 - 3 - Riverside Park Dam, Sangamon River
Dam Face, from Downstream. (IDNR, 2006)

Photo 5.6.1.2 - 4 - Riverside Park Dam, Sangamon River
Dam Face, from Downstream (IDNR, 2006)

S:\232\23206058\eagle point\riverside.dwg



Designed By: N/A	Drawn By: NDP	Reviewed By: ADC	Date: 18 December 2006	Project No.: 232-06058	Drawing: 8 — 1 OF 2

Client:

FIGURE 5.6.1.2-2

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Sheet Title:

RIVERSIDE DAM - SANGAMON RIVER
SANGAMON COUNTY, ILLINOIS
DAM SURVEY - PLAN VIEW

Project:

DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

MAURER-STUTZ, INC.
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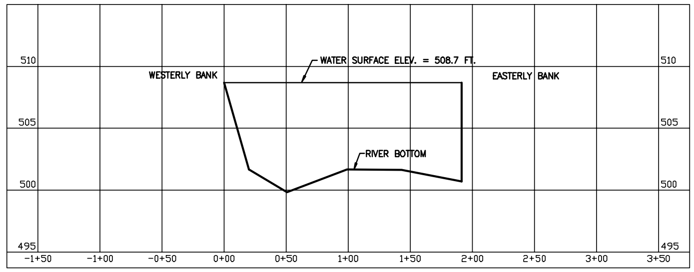
FAX (309) 693-7616

1670 EAST ASH STREET
CANTON, ILLINOIS 61520
PH. (309) 647-7831
FAX (309) 647-6155

ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

REVISIONS		
No.	Date	Description



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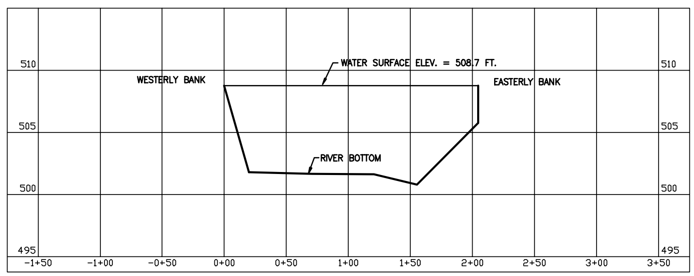
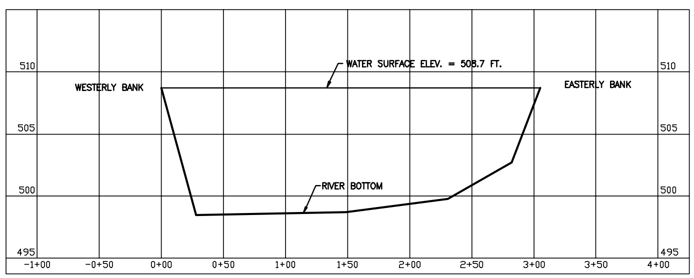
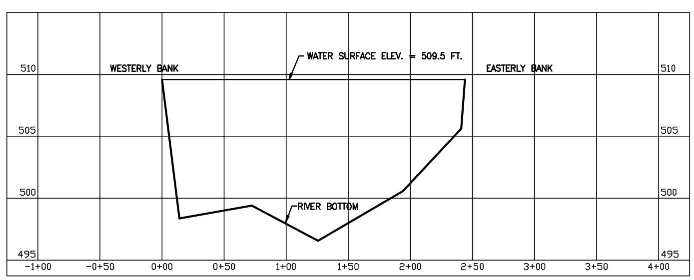


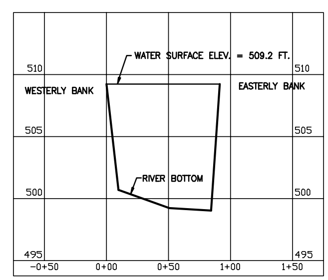
300'± DOWNSTREAM



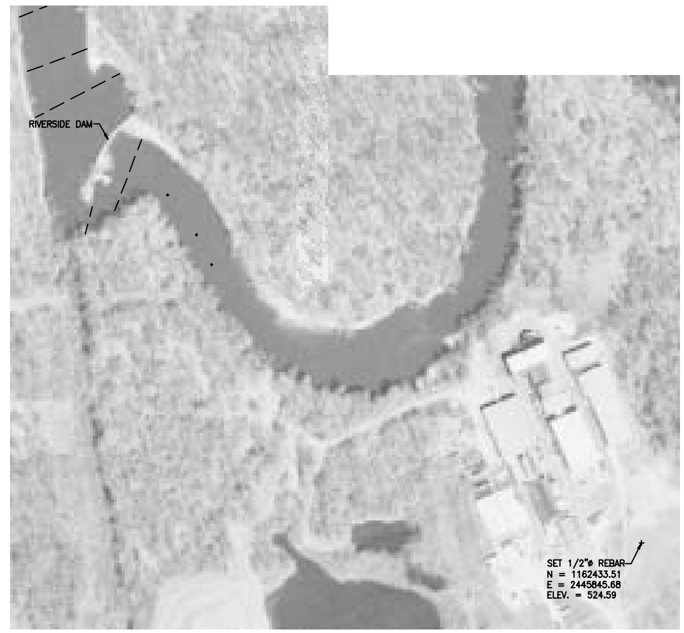
160'± DOWNSTREAM

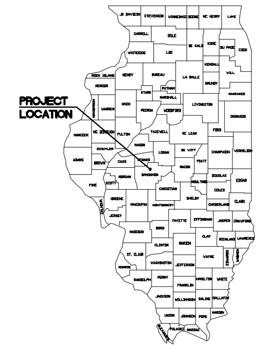


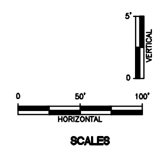
100'± UPSTREAM



DAM OPENING EXTENDED







SCALES

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

REVISIONS		
No.	Date	Description

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1870 EAST ASH STREET CANTON, ILLINOIS 61520 PH. (309) 647-7831 FAX (309) 647-8155
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

Sheet Title: **RIVERSIDE DAM - SANGAMON RIVER SANGAMON COUNTY, ILLINOIS DAM SURVEY - CROSS SECTIONS**

Project: **DAM SAFETY EVALUATIONS STATEWIDE PROGRAM**

Client:

FIGURE 5.6.1.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 8
2 OF 2

S:\232\23206058\eagle point\riverside.dwg

5.6.1.3 Assessment

1) Consider going over the remaining concrete spillway in periods of high water.
2) No warning signs upstream to alert canoeists of the downstream dam and to make sure they hug the left bank to bypass remaining structures.
3) Continuing erosion of high bank downstream of dam.

5.6.2 Petersburg Dam

5.6.2.1 Existing Documentation

¶ **Dam and Location:**

Petersburg Dam	Petersburg IL	Sangamon River	Menard County

¶ **Ownership**
The ownership of this dam is unavailable. (IDNR 2006)

¶ **History**
The history of the dam is not available. (IDNR 2006)

¶ **Available Documents**
Personal Safety at Run of River Dams on Public Waters in Illinois. IDNR. September 2006.

5.6.2.2 Visual Reconnaissance

¶ **Dam and Location:**

Petersburg Dam	Petersburg IL	Sangamon River	Menard County

¶ **Inspectors:**

Name: Karen Kabbes
Company: Kabbes Engineering

Name:
Company:

¶ **Date & Time:** 1/20/07, 11:00am to 12:30pm

¶ **Approximate Flow:** TBD

¶ **Standard Photo Set/Video:** Complete.

¶ **General Dam & River Bank Condition**
Dam was submerged during inspection so condition could not be determined. Later non-site investigation revealed that the dam has been breached.

¶ **Evidence of Roller**
Possible roller near left bank.

¶ **Portages**
None observed.

¶ **Boat Restraints**
None observed.

¶ **Shore Restraints/Access Limits**
None observed.

¶ **Lifesaving Equipment**
None observed.

¶ **Emergency Call Box**
None observed.

¶ **Warning/Information Signage**
None observed.

¶ **Lighting**
None observed.

¶ **Access (pedestrian, vehicular, emergency equipment)**
Boat ramp located downstream of dam on left bank. Old stairs located on left bank downstream of dam. Earthen ramp/path located upstream of dam on left bank.

¶ **EMS Interview Summary**

Interview with Mr. Billy Gum
Menard County Emergency Services Disaster Agency

1) Do you have an emergency response plan for potential drowning incidents at this dam? Can you estimate the response time?

   'In the last twelve years there have been three fatalities in the river; the most recent was 4-5 years ago, a young boy drowned ¼ mile downstream of the dam after falling off of a dock. None of the fatalities were directly associated with the dam. However, bodies that get into the river are often

2) Do you know of any deaths/accidents at the dam? Please describe nature of accident, fatalities and when the accident occurred (i.e., approximate month and year).

   'In the last twelve years there have been three fatalities in the river; the most recent was 4-5 years ago, a young boy drowned ¼ mile downstream of the dam after falling off of a dock. None of the fatalities were directly associated with the dam. However, bodies that get into the river are often recovered just downstream of the dam.'

3) Are there any public education measures in place to promote dam safety?

   'None that he is aware of.'

4) Do you have ideas/suggestions on how to improve safety and/or prevent future deaths?

   'More public education about the hazards of high water flows would be good, especially for the kids. Signage in the area would help. There is a path that leads directly onto the dam which tends to draw a lot of kids and fishermen during higher flow events. Fences might be a good idea. Also, there is a kayaking group that promotes "Shooting the dam" during high flow events when water is overtopping the remnant of the dam. The Conservation Police have witnessed this and cannot stop the kayakers. No one has gotten hurt so far.' Information for the emergency responders about the river hazards would also be very helpful and was requested by the respondent.

0 50 100 200 Feet

1 inch equals 200 feet

Petersburg Dam - SangamonRiver

Petersburg, Illinois

CTE | AECOM

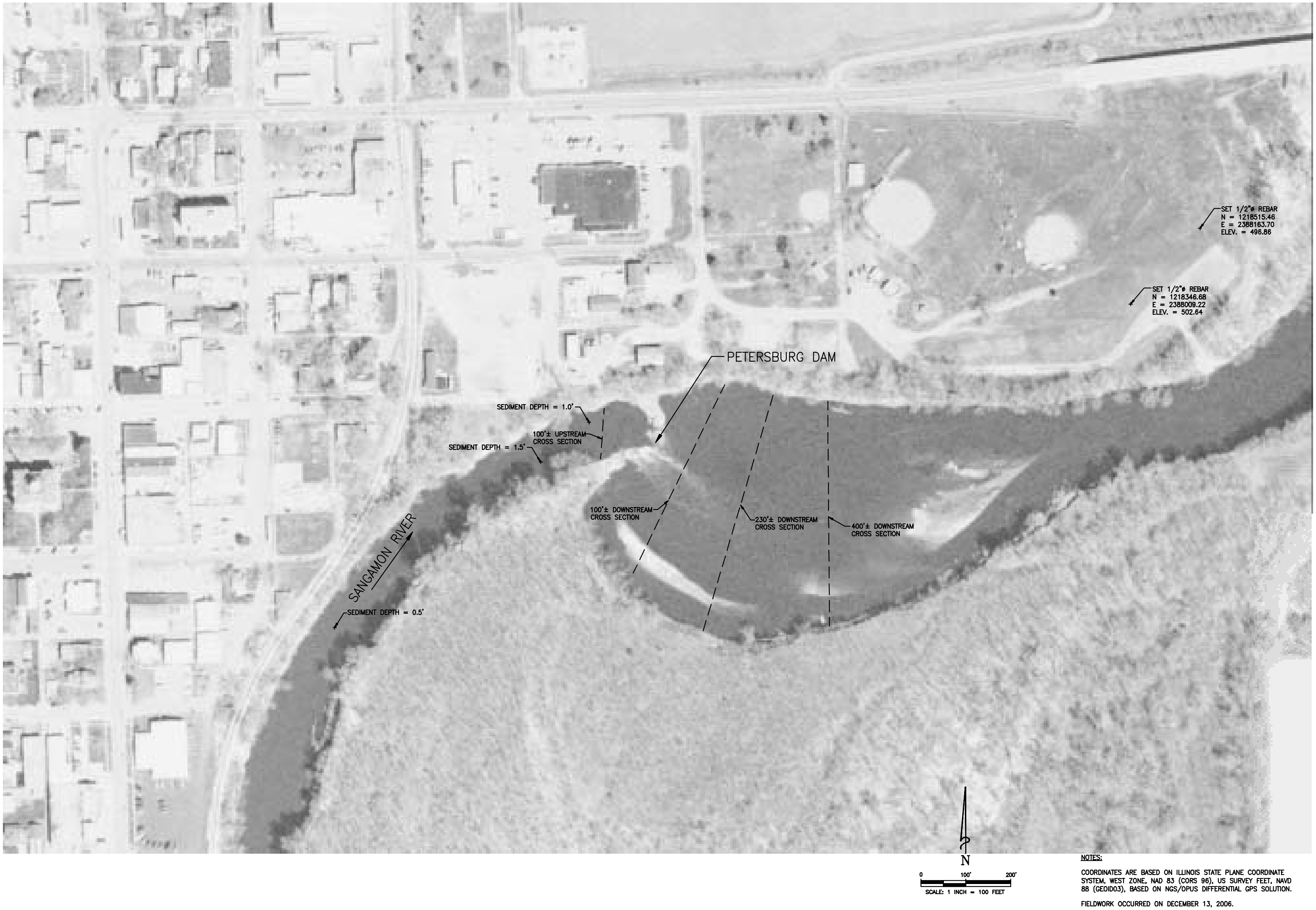
Figure 5.6.2.2-1

Petersburg

Photo 5.6.2.2 - 1 - Petersburg Dam, Sangamon River
Ladder for fisherman.

Photo 5.6.2.2 - 2 - Petersburg Dam, Sangamon River
Submerged dam face, from left bank.

Photo 5.6.2.2 – 3 – Petersburg Dam, Sangamon River
Dam face, from left bank, summer. (IDNR, 2006)



NOTES:

COORDINATES ARE BASED ON ILLINOIS STATE PLANE COORDINATE SYSTEM, WEST ZONE, NAD 83 (CORS 96), US SURVEY FEET, NAVD 88 (GEOID03), BASED ON NGS/OPUS DIFFERENTIAL GPS SOLUTION.

FIELDWORK OCCURRED ON DECEMBER 13, 2006.

REVISIONS

No.	Date	Description

MAURER & STUTZ, INC.
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PH. (309) 647-7831
FAX (309) 647-6155

ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

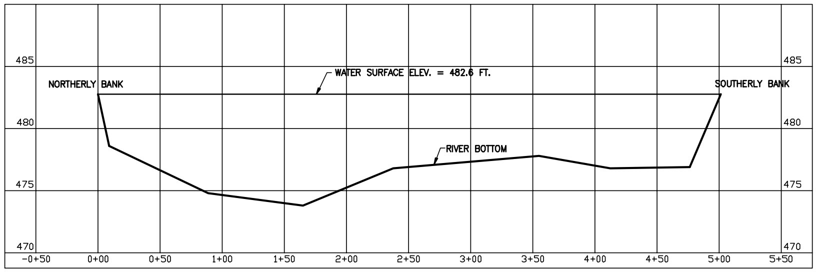
Sheet Title:
PETERSBURG DAM - SANGAMON RIVER
MENARD COUNTY, ILLINOIS
DAM SURVEY - PLAN VIEW

Project:
DAM SAFETY EVALUATIONS
STATEWIDE PROGRAM

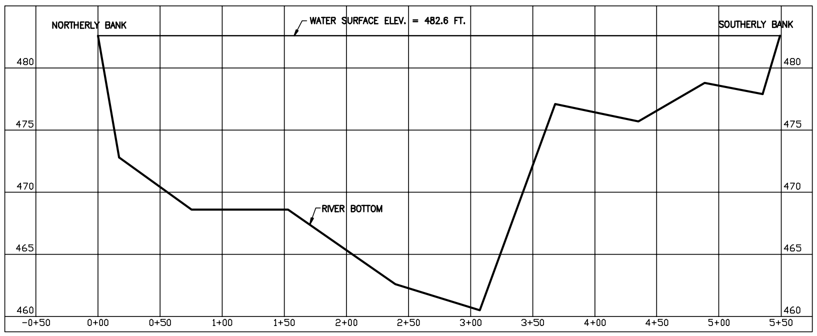
Client:
FIGURE 5.6.2.2-2
CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 9

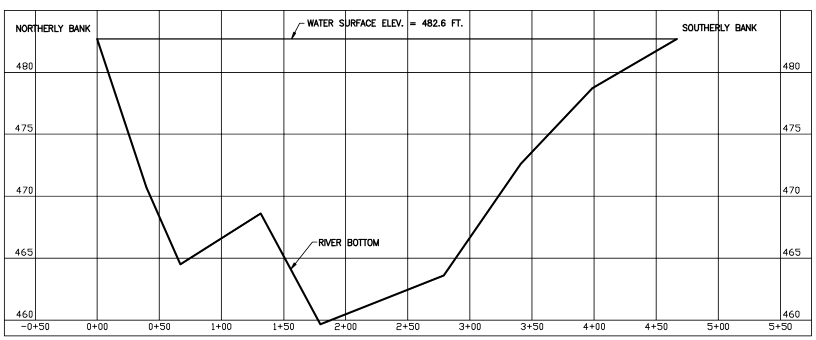
1 OF 2



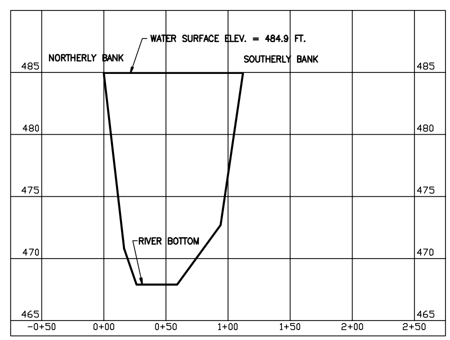
400'± DOWNSTREAM



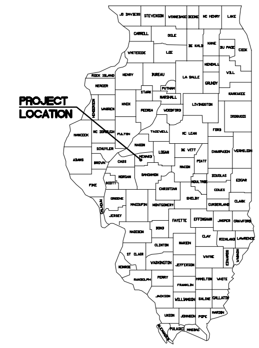
230'± DOWNSTREAM

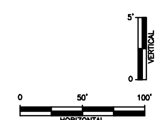


100'± DOWNSTREAM



100'± UPSTREAM





SCALES

NOTES:

ALL SECTIONS ARE ORIENTED LOOKING DOWNSTREAM.

CROSS SECTION LOCATIONS SHOWN ARE AT NOMINAL LOCATION. RIVER BOTTOM LOCATION SHOWN IS WATER BOTTOM LOCATION AND DOES NOT INCLUDE SEDIMENT (WHICH IS SHOWN ON PLAN VIEW).

REVISIONS		
No.	Date	Description
1	1/28/07	Revised cross sections

MAURER-STUTZ, INC.
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1670 EAST ASH STREET, CANTON, ILLINOIS 61520, PH. (309) 647-7831, FAX (309) 647-6155
ILLINOIS PROFESSIONAL DESIGN FIRM LICENSE #184-000177

Sheet Title: **PETERSBURG DAM - SANGAMON RIVER**
MENARD COUNTY, ILLINOIS
DAM SURVEY - CROSS SECTIONS

Project: **DAM SAFETY EVALUATIONS**
STATEWIDE PROGRAM

Client:

FIGURE 5.2.1.2-3

CONSOER TOWNSEND ENVIRODYNE ENGINEERS, INC.

Designed By: N/A
Drawn By: NDP
Reviewed By: ADC
Date: 18 December 2006
Project No.: 232-06058
Drawing: 9
2 OF 2

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5.6.2.3 Assessment

1) The dam has been partially breached per kayaking site information (water was too high to see breach when dam was inspected) and breached dam site is a major kayaking draw highlighted on several kayaking websites as “Dead Carp Drop” and at least one tourism site. Websites note that kayakers need to be experienced to traverse breach, based on water elevation. Site is home of an active local kayaking club called “Team Dirt Clod” http://teamdirtclod.com who holds an annual event at the site.